# STIC Search Report
## EIC 1700

## STIC Database Tracking Number: 96509

| | |
|---|---|
| **TO: Camie Thompson**<br>**Location: CP3 11B21**<br>**Art Unit : 1774**<br>**June 13, 2003**<br><br>**Case Serial Number: 10009021** | **From: Kathleen Fuller**<br>**Location: EIC 1700**<br>**CP3/4 3D62**<br>**Phone: 308-4290**<br><br>**Kathleen.Fuller@uspto.gov** |

## Search Notes

96509

Access DB# [redacted]

# SEARCH REQUEST FORM

**Scientific and Technical Information Center**

Requester's Full Name: Camie S. Thompson Examiner #: 79244 Date: 6/12/03
Art Unit: 1774 Phone Number 30 5 4488 Serial Number: 10/009021
Mail Box and Bldg/Room Location: CP3 11B/21 Results Format Preferred (circle): PAPER DISK E-MAIL

**If more than one search is submitted, please prioritize searches in order of need.**

**********

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Organic electroluminescent element

Inventors (please provide full names): Tadashi Ishibashi; Mari Ichimura; Naoyuki Ueda; Shinichiro Tamura

Earliest Priority Filing Date: 4/7/2000

***For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Please do a CRS search for formulas 1-7.

Also do a search on claims 1-55

Thanks,
Camie

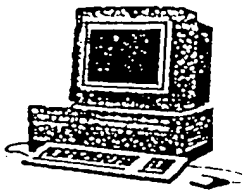
**********

| STAFF USE ONLY | Type of Search | Vendors and cost where applicable |
|---|---|---|
| Searcher: K. Fuller | NA Sequence (#) | STN ✓ |
| Searcher Phone #: | AA Sequence (#) | Dialog |
| Searcher Location: | Structure (#) 4 | Questel/Orbit |
| Date Searcher Picked Up: | Bibliographic | Dr.Link |
| Date Completed: 6/13/03 | Litigation | Lexis/Nexis |
| Searcher Prep & Review Time: 30 | Fulltext | Sequence Systems |
| Clerical Prep Time: | Patent Family | WWW/Internet |
| Online Time: 45 | Other | Other (specify) |

PTO-1590 (8-01) subset search

# EIC1700

# Search Results Feedback Form (Optional)



Scientific & Technical Information Center

The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the EIC searcher* who conducted the search *or contact*:

Kathleen Fuller, Team Leader, 308-4290, CP3/4 3D62

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*Voluntary Results Feedback Form*

- *I am an examiner in Workgroup:* [ ] *Example:* [1713]
- *Relevant prior art **found**, search results used as follows:*
  - [ ] 102 rejection
  - [ ] 103 rejection
  - [ ] Cited as being of interest.
  - [ ] Helped examiner better understand the invention.
  - [ ] Helped examiner better understand the state of the art in their technology.

*Types of relevant prior art found:*

- [ ] Foreign Patent(s)
- [ ] Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art **not found**:*
  - [ ] Results verified the lack of relevant prior art (helped determine patentability).
  - [ ] Search results were not useful in determining patentability or understanding the invention.

**Other Comments:**

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Drop off completed forms in CP3/4 - 3D62 .

=> FILE REG
FILE 'REGISTRY' ENTERED AT 10:15:34 ON 13 JUN 2003


Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 11 JUN 2003 HIGHEST RN 529474-19-9
DICTIONARY FILE UPDATES: 11 JUN 2003 HIGHEST RN 529474-19-9

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

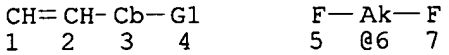
Experimental and calculated property data are now available. See HELP PROPERTIES for more information. See STNote 27, Searching Properties in the CAS Registry File, for complete details:
http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf

=> FILE HCAPLUS
FILE 'HCAPLUS' ENTERED AT 10:15:38 ON 13 JUN 2003


FILE COVERS 1907 - 13 Jun 2003 VOL 138 ISS 25
FILE LAST UPDATED: 12 Jun 2003 (20030612/ED)

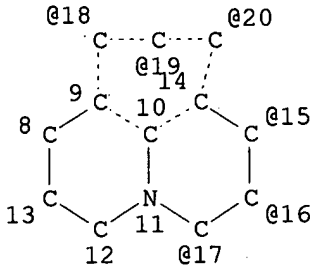
This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE
L3 STR

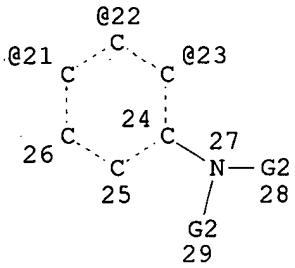









G3 30



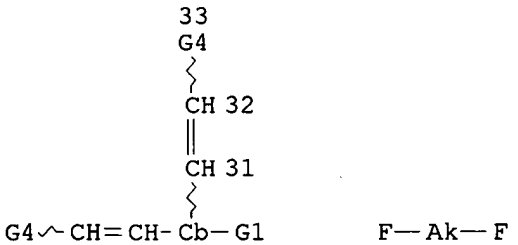

9,059 structures from query

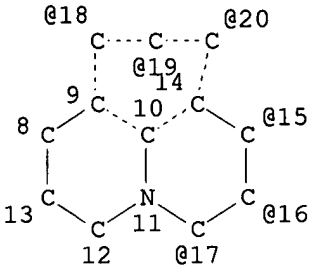
VAR G1=X/NO2/CN/6
VAR G2=H/CB/AK
VAR G3=21/22/23/18/19/20/15/16/17
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
MLEVEL IS CLASS AT 18 19 20
GGCAT IS UNS AT 3
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS UNLIMITED AT 18 19 20

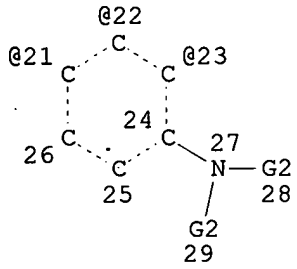
GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 30

STEREO ATTRIBUTES: NONE
L5 SCR 1839
L9 SCR 1016
L12 9059 SEA FILE=REGISTRY SSS FUL L3 AND L5 AND L9
L18 STR

Subset search with more exact compound




198 structures found

VAR G1=X/NO2/CN/6
VAR G2=H/CB/AK
VAR G4=18/19/20/15/16/17/21/22/23
NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
MLEVEL IS CLASS AT 18 19 20
GGCAT IS UNS AT 3
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS UNLIMITED AT 18 19 20

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 33

STEREO ATTRIBUTES: NONE
L20 198 SEA FILE=REGISTRY SUB=L12 SSS FUL L18
L21 63 SEA FILE=HCAPLUS ABB=ON L20
L22 27 SEA FILE=HCAPLUS ABB=ON L21 AND (EL OR ?LUMINES?)

27 CA references from the structures with utility

=> D L22 ALL 1-27 HITSTR

L22 ANSWER 1 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:150556 HCAPLUS
DN 138:189408
TI Fluorescent bis(aminostyryl)benzene dyes and intermediates and their production
IN Ichimura, Mari; Tamura, Shinichiro; Ishibashi, Tadashi; Takada, Ichinori

PA Sony Corporation, Japan
SO U.S., 125 pp., Cont.-in-part of U.S. Ser. No. 455,724.
CODEN: USXXAM
DT Patent
LA English
IC ICM C07C205-35
ICS C07C209-78; C07C217-76; C07C253-30; C07C255-60
NCL 558418000; 558419000; 558421000; 564429000; 564434000
CC 41-11 (Dyes, Organic Pigments, Fluorescent Brighteners, and Photographic Sensitizers)
Section cross-reference(s): 25, 76
FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | US 6525212 | B1 | 20030225 | US 2000-704960 | 20001102 |
| | JP 2000230132 | A2 | 20000822 | JP 1999-312069 | 19991102 |
| | US 6337167 | B1 | 20020108 | US 1999-455724 | 19991206 |
| | US 2003060652 | A1 | 20030327 | US 2002-228019 | 20020826 |
| | US 2003069437 | A1 | 20030410 | US 2002-227671 | 20020826 |
| | US 2003073863 | A1 | 20030417 | US 2002-227711 | 20020826 |
| PRAI | JP 1998-347561 | A | 19981207 | | |
| | JP 1999-312069 | A | 19991102 | | |
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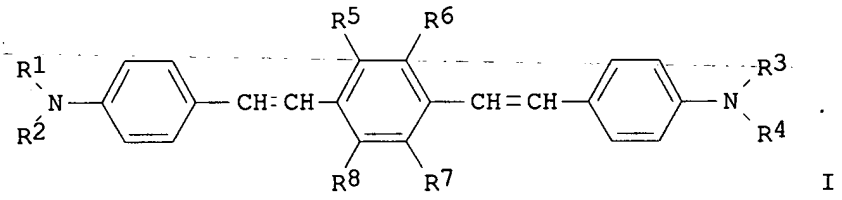
| | US 2000-704960 | A3 | 20001102 | | |

OS MARPAT 138:189408

GI



I

AB Fluorescent bis(aminostyryl)benzene dyes (I; R2, R3 = unsubstituted aryl; R1, R4 = substituted aryl; at least one of R5, R6, R7, R8 is CN or NO2 and the rest are H, CN, NO2, and/or H). I are produced from suitable intermediates and are useful in **electroluminescent** applications. Intermediates of the bis(aminostyryl)benzene compd. are also described. In an example, Et3PO4 was condensed (2:1) with 2,5-bis(bromomethyl)terephthalonitrile to give a product which was condensed (1:2) with 4-[N-(4-ethoxyphenyl)-N-phenylamino]benzaldehyde to provide a fluorescent dye.

ST fluorescent aminostyryl dye prodn **electroluminescent** material

IT **Luminescent** substances
(**electroluminescent**; prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

IT Dyes
(intermediates; in prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

IT Fluorescent dyes
(prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

IT **288626-90-4 288626-91-5 288626-92-6**
**288626-93-7**
RL: TEM (Technical or engineered material use); USES (Uses)
(dye; fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

IT **251101-60-7P 251349-04-9P 253868-17-6P**
**253868-91-6P 288626-78-8P 288626-79-9P**
**288626-80-2P 288626-81-3P 288626-82-4P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

IT 4316-53-4P, 4-Methyltriphenylamine 4432-94-4P 20440-94-2P
20440-95-3P 36809-23-1P 42906-19-4P 60876-70-2P 64746-04-9P
89115-20-8P 89115-21-9P 117029-71-7P 288626-95-9P 288626-97-1P
288626-98-2P 499144-21-7P 499144-24-0P 499144-30-8P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

IT **499144-37-5P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(orange dye; prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

IT 4316-52-3P
RL: IMF (Industrial manufacture); PREP (Preparation)
(prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

IT 62-53-3, Aniline, reactions 68-12-2, Dimethylformamide, reactions
78-40-0, Triethyl phosphate 92-66-0, 4-Bromobiphenyl 101-70-2,
Bis(4-methoxyphenyl)amine 115-11-7, Isobutylene, reactions 122-39-4,
Diphenylamine, reactions 128-08-5, N-Bromosuccinimide 540-38-5,
4-Iodophenol 586-77-6, 4-Bromo-N,N-dimethylaniline 591-50-4,
Iodobenzene 603-35-0, Triphenylphosphine, reactions 620-93-9,
Di-p-tolylamine 624-31-7, 4-Iodotoluene 699-08-1 3972-65-4,
1-Bromo-4-tert-butylbenzene 4181-05-9, 4-(Diphenylamino)benzaldehyde
87755-82-6 105114-53-2 131660-61-2 288626-94-8 288626-96-0
288627-04-3 314270-67-2
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

IT **288626-83-5P 288626-84-6P 288626-85-7P**
**288626-86-8P 288626-87-9P 288626-88-0P**
**288626-89-1P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(yellowish orange dye; prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; JP 11273859 A2 1998 HCAPLUS
(2) Kawaguchi; US 6022998 A 2000 HCAPLUS
(3) Stecher, P; The Merck Index, eighth edition 1968, P1226

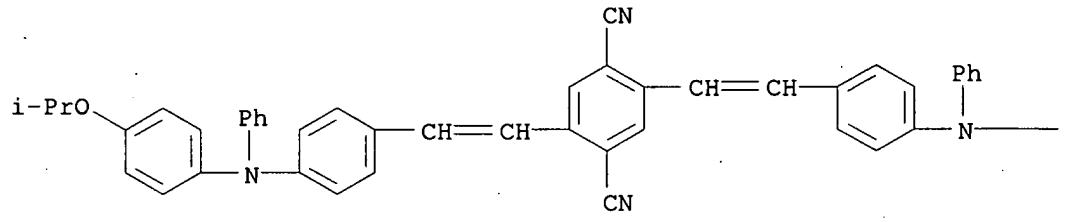
IT **288626-90-4 288626-91-5 288626-92-6**
**288626-93-7**
RL: TEM (Technical or engineered material use); USES (Uses)
(dye; fluorescent bis(aminostyryl)benzene dyes for

**electroluminescent** applications)

RN 288626-90-4 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(1-methylethoxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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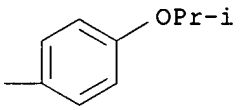
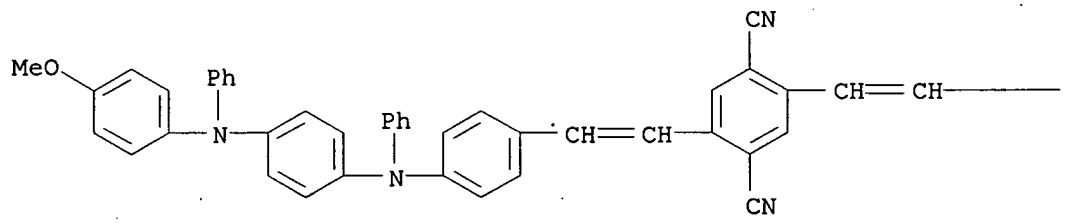



RN 288626-91-5 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-[(4-methoxyphenyl)phenylamino]phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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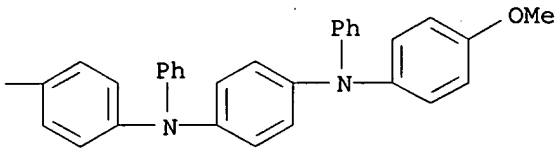


RN 288626-92-6 HCAPLUS

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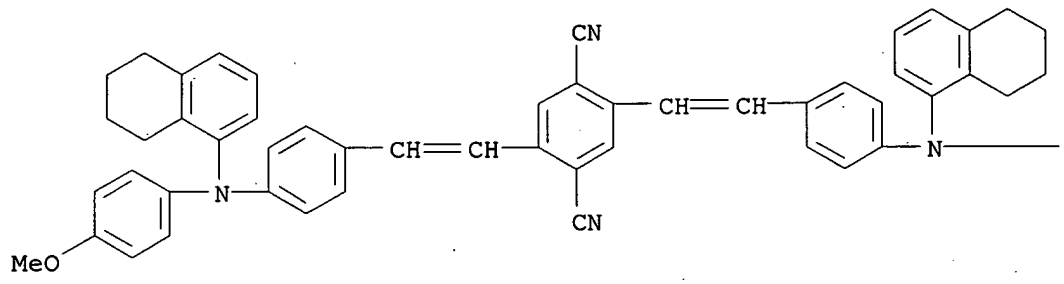
PAGE 1-A

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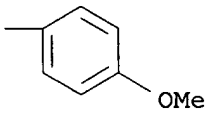


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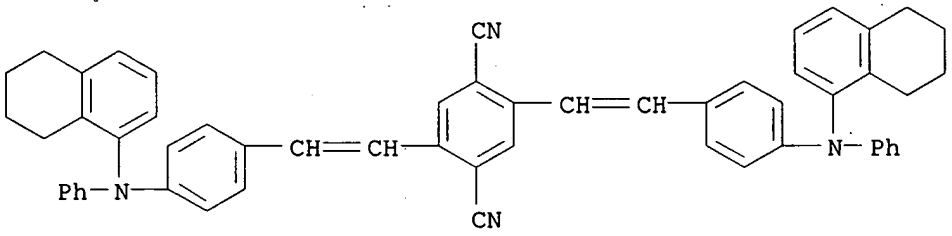
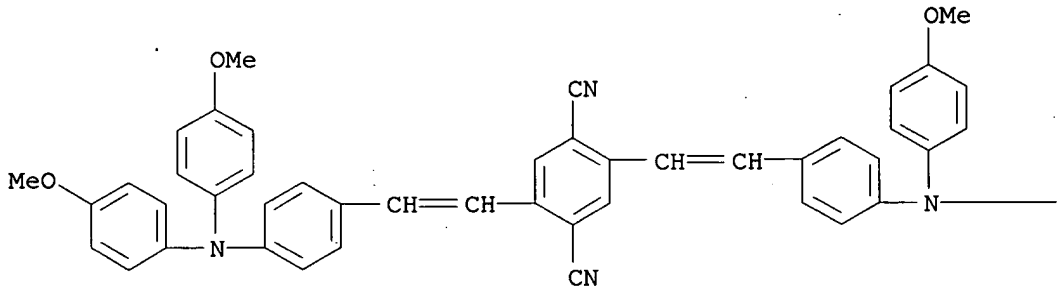



IT **251101-60-7P 251349-04-9P 253868-17-6P**
**253868-91-6P 288626-78-8P 288626-79-9P**
**288626-80-2P 288626-81-3P 288626-82-4P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(dye; prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)

RN 251101-60-7 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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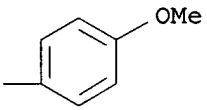


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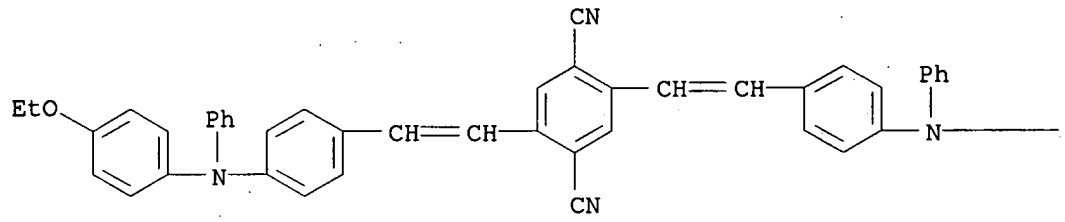
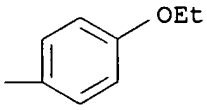
PAGE 1-A




PAGE 1-B

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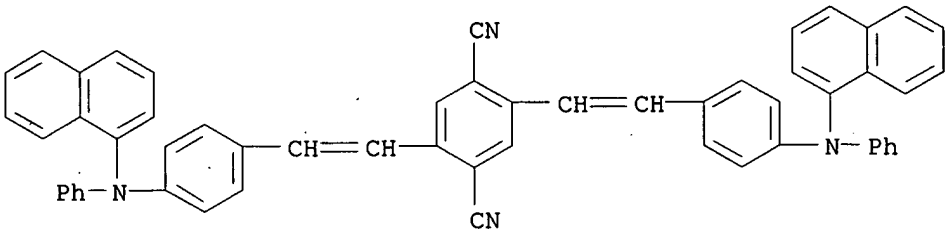

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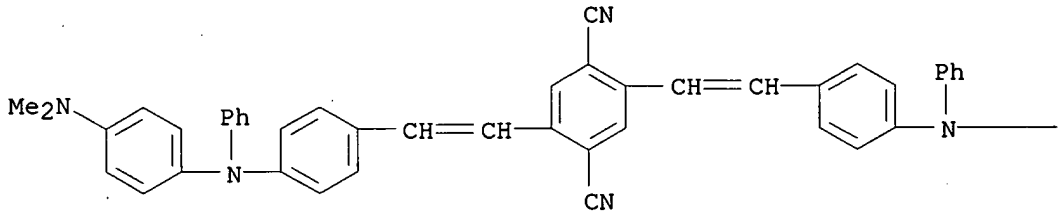
PAGE 1-A



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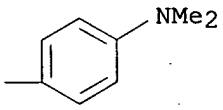

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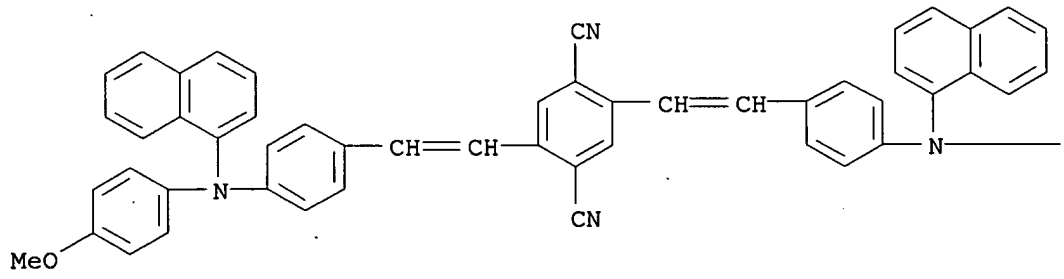
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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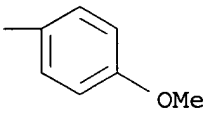


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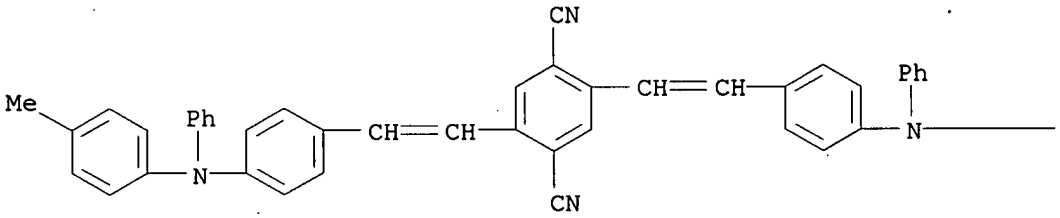
PAGE 1-A

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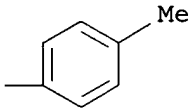


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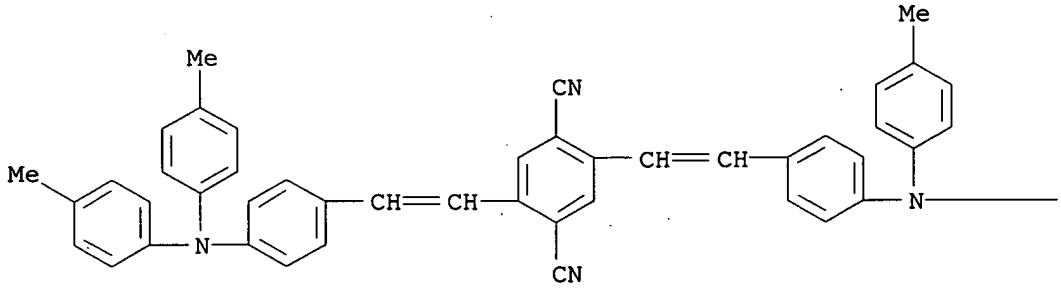
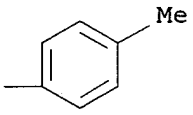
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

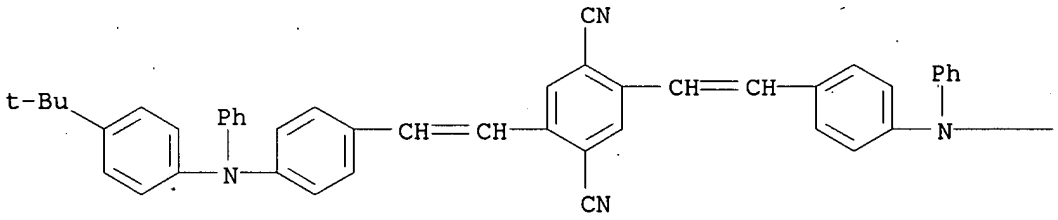


PAGE 1-B

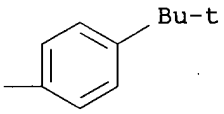



RN 288626-81-3 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(1,1-dimethylethyl)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

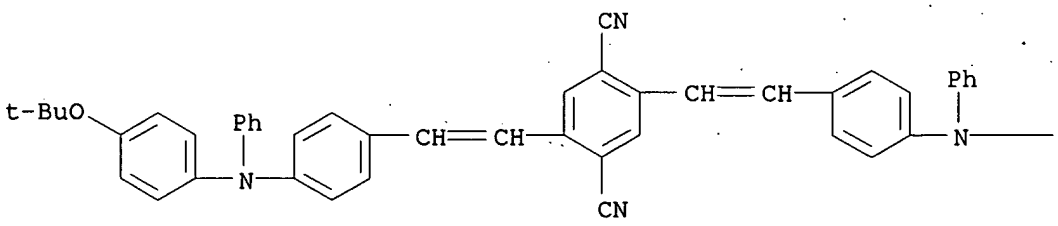



PAGE 1-B

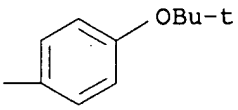



RN 288626-82-4 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(1,1-dimethylethoxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

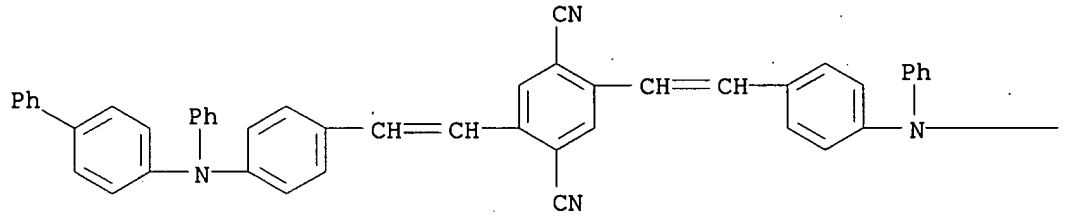


PAGE 1-B

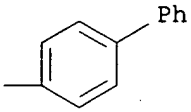



IT **499144-37-5P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(orange dye; prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)
RN 499144-37-5 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-([1,1'-biphenyl]-4-ylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

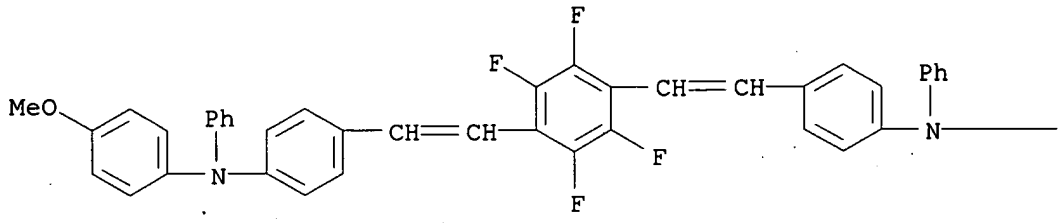



PAGE 1-B

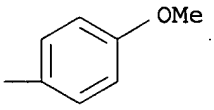



IT **288626-83-5P 288626-84-6P 288626-85-7P**
**288626-86-8P 288626-87-9P 288626-88-0P**
**288626-89-1P**
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(yellowish orange dye; prodn. of fluorescent bis(aminostyryl)benzene dyes for **electroluminescent** applications)
RN 288626-83-5 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N-(4-methoxyphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

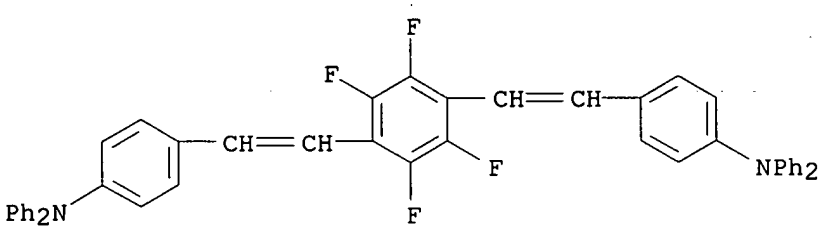
PAGE 1-A



PAGE 1-B

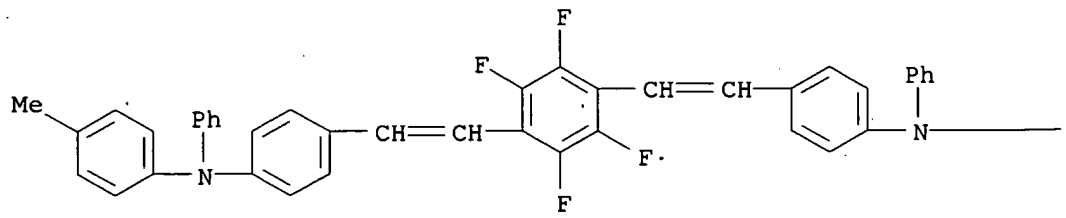


RN 288626-84-6 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-diphenyl- (9CI) (CA INDEX NAME)

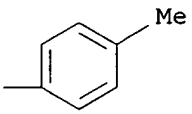


RN 288626-85-7 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N-(4-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

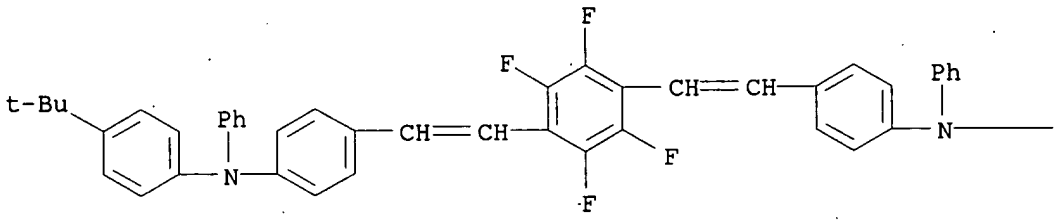


PAGE 1-B

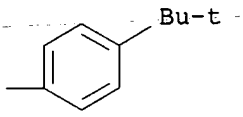



RN 288626-86-8 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N-[4-(1,1-dimethylethyl)phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

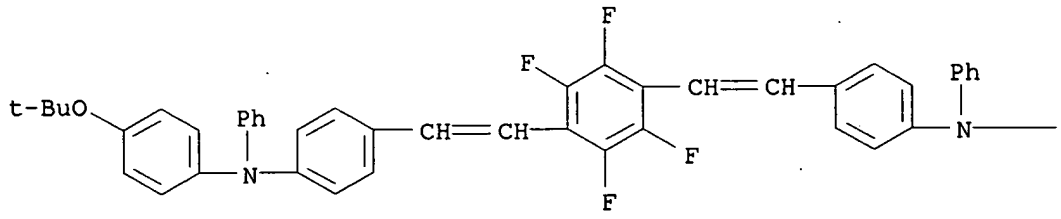



PAGE 1-B




RN 288626-87-9 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N-[4-(1,1-dimethylethoxy)phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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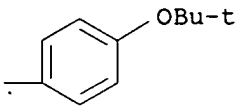
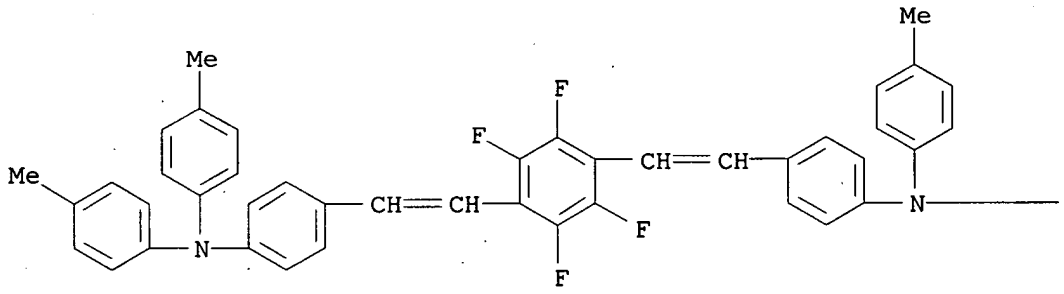
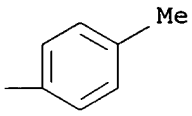



RN 288626-88-0 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

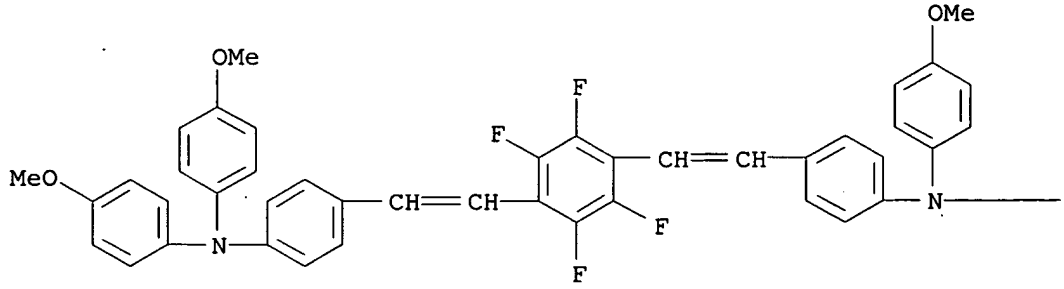



PAGE 1-B




RN 288626-89-1 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



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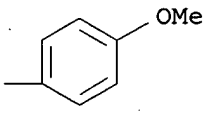



L22 ANSWER 2 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2003:96340 HCAPLUS
DN 138:144766
TI Polymeric fluorescent substance and polymer light-emitting device using the same
IN Doi, Shuji; Noguchi, Takanobu; Tsubata, Yoshiaki
PA Sumitomo Chemical Company, Limited, Japan
SO Eur. Pat. Appl., 31 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C09K011-06
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 74, 76
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 1281745 | A1 | 20030205 | EP 2002-255267 | 20020729 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK | | | | |
| | US 2003064247 | A1 | 20030403 | US 2002-206880 | 20020729 |
| | JP 2003155476 | A2 | 20030530 | JP 2002-219296 | 20020729 |
| PRAI | JP 2001-229306 | A | 20010730 | | |

AB Polymeric fluorescent substances exhibiting visible fluorescence in the solid state and having a polystyrene reduced no. av. mol. wt. of 103-108 are described which are formed from arylene repeating units, optionally along with divalent heterocyclic repating units, with at least some of the arylene repeating units having substituents including triarylamine groups. Light-emitting devices and displays employing the polymers, and liq.-crystal displays employing the light-emitting devices as backlights, are also described.

ST **electroluminescent** device fluorescent polymer arylamine substituent; fluorescent polymer arylamine substituent

IT **Electroluminescent** devices
(displays; fluorescent polymers from monomers with triarylamine substituents and light-emitting devices using them)

IT **Luminescent** screens
(**electroluminescent**; fluorescent polymers from monomers with triarylamine substituents and light-emitting devices using them)

IT **Electroluminescent** devices
Fluorescent substances
(fluorescent polymers from monomers with triarylamine substituents and light-emitting devices using them)

IT **494775-65-4P** 494775-67-6P 494775-68-7P 494775-69-8P

494775-70-1P 494775-72-3P 494775-73-4P 494775-74-5P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(fluorescent polymers from monomers with triarylamine substituents and light-emitting devices using them)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Bernius, M; THIN SOLID FILMS 2000, V363, P55 HCAPLUS
(2) Campbell, S; US 6107452 A 2000 HCAPLUS
(3) Dow Chemical Co; WO 0046321 A 2000 HCAPLUS
(4) Inbasekaran, M; US 6255449 B1 2001 HCAPLUS
(5) Robert, T; WO 0055927 A 2000

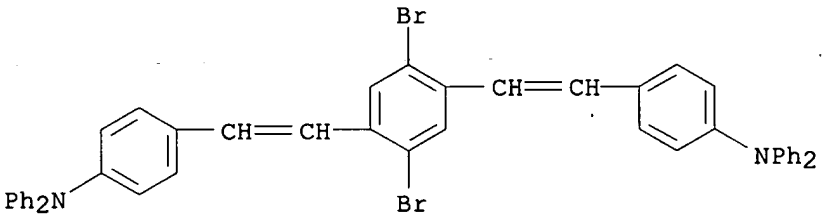
IT **494775-65-4P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(fluorescent polymers from monomers with triarylamine substituents and light-emitting devices using them)

RN 494775-65-4 HCAPLUS

CN Benzenamine, 4,4'-[(2,5-dibromo-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-diphenyl-, polymer with 2,7-dibromo-9,9-dioctyl-9H-fluorene (9CI) (CA INDEX NAME)

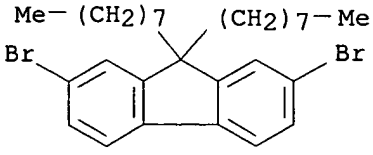
CM 1

CRN 214626-73-0
CMF C46 H34 Br2 N2




CM 2

CRN 198964-46-4
CMF C29 H40 Br2




L22 ANSWER 3 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:656370 HCAPLUS
DN 137:192554
TI Vapor phase deposition of organic material thin film, its apparatus, and fabrication of organic **electroluminescent** device with the thin

film
IN Tamura, Shinichiro; Ishibashi, Tadashi
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-10
ICS C23C014-12; C23C014-24; H05B033-14; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2002246175 | A2 | 20020830 | JP 2001-39408 | 20010216 |
| PRAI JP 2001-39408 | | 20010216 | | |

AB The invention provides a process and app. for deposition of org. material thin films having good characteristics from a plurality of materials which behave differently under heat by optimizing the conditions for deposition for each raw materials. In the deposition of a 1st material which evaps. after being melted under heat and/of a 2nd material which sublimes under heat, a 1st container having a 1st opening having the same or larger size than the surface area of the contained, said org. material, the flying angle of the vapor of the org. material from the opening being .gtoreq.90.degree., and a 2nd container having a 2nd opening smaller than the surface area of the contained, said org. material. The 1st and the 2nd containers (evaporator boats) will be made from Ta, Mo, W, or BN. Evapn./sublimation velocities will be regulated properly, thereby providing films with uniform thicknesses.

ST vapor phase deposition org material thin film; org **electroluminescent** material vapor phase deposition; evaporator source design org **electroluminescent** device fabrication

IT Vapor deposition apparatus
Vapor deposition process
(app. design for vapor phase deposition of org. material thin film for manuf. of org. **EL** device)

IT **Electroluminescent** devices
(org.; app. design for vapor phase deposition of org. material thin film for manuf. of org. **EL** device)

IT 2085-33-8, Alq3
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(electron transporting material; app. design for vapor phase deposition of org. material thin film for manuf. of org. **EL** device)

IT **232948-26-4**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(electron/hole transporting material; app. design for vapor phase deposition of org. material thin film for manuf. of org. **EL** device)

IT 167218-46-4 **333339-14-3**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(hole transporting layer; app. design for vapor phase deposition of

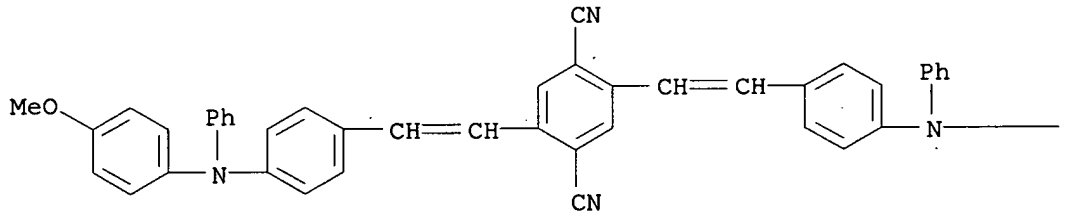
org. material thin film for manuf. of org. **EL** device)

IT **232948-26-4**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(electron/hole transporting material; app. design for vapor phase deposition of org. material thin film for manuf. of org. **EL** device)

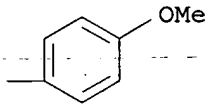
RN 232948-26-4 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A




PAGE 1-B

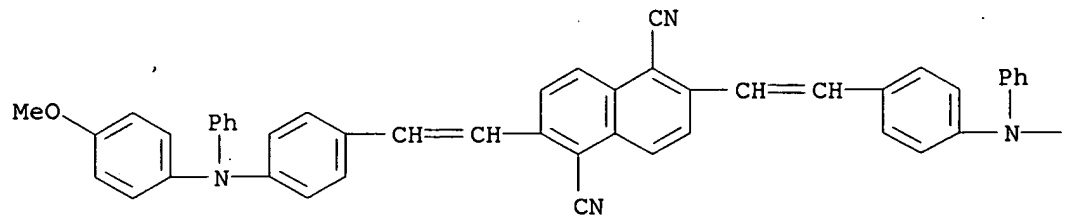



IT **333339-14-3**
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(hole transporting layer; app. design for vapor phase deposition of org. material thin film for manuf. of org. **EL** device)

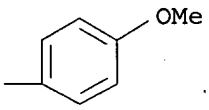
RN 333339-14-3 HCAPLUS

CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B




L22 ANSWER 4 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:553526 HCAPLUS
DN 137:132204
TI Organic **electroluminescent** (**EL**) elements for full-color flat displays with high brightness and durability
IN Tamura, Shinichiro; Ishibashi, Tadashi; Ichimura, Mari
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 32 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C09K011-06
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38, 73
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2002208488 | A2 | 20020726 | JP 2001-4859 | 20010112 |
| PRAI JP 2001-4859 | | 20010112 | | |

AB The element has an org. layer (including a light-emitting region) between an anode and a cathode, wherein the org. layer contains an elec. conductive polymer including a styryl compd. (a distyryl compd., preferably) chem. bonded to the main or side chain of the polymer.
ST org **EL** full color flat display; **electroluminescent** display high brightness styryl polymer; styryl graft polyphenylenevinylene elec cond display
IT Optical imaging devices
(flat, full-color, elements for; org. **EL** elements contg. elec. conductive polymers having distyryl structures with high brightness and durability)
IT Conducting polymers
(light emitter; org. **EL** elements contg. elec. conductive polymers having distyryl structures with high brightness and durability)
IT **Electroluminescent** devices
(org. **EL** elements contg. elec. conductive polymers having distyryl structures with high brightness and durability)
IT **443971-33-3 443971-35-5 443971-37-7**
**443971-39-9** 443971-41-3 443971-43-5
RL: TEM (Technical or engineered material use); USES (Uses)
(light emitter; org. **EL** elements contg. elec. conductive polymers having distyryl structures with high brightness and durability)
IT **443971-33-3 443971-35-5 443971-37-7**
**443971-39-9**

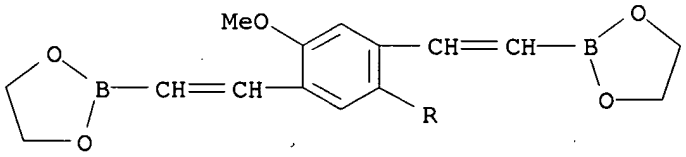
RL: TEM (Technical or engineered material use); USES (Uses)
(light emitter; org. **EL** elements contg. elec. conductive polymers having distyryl structures with high brightness and durability)

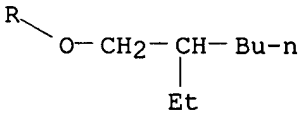
RN 443971-33-3 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2-[2-[4-[[4-[4-[(2-ethylhexyl)oxy]-2,5-diiodophenoxy]phenyl]-1-naphthalenylamino]phenyl]ethenyl]-5-[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]-, polymer with 1-[(2-ethylhexyl)oxy]-2,5-diiodo-4-methoxybenzene and 2,2'-[[2-[(2-ethylhexyl)oxy]-5-methoxy-1,4-phenylene]di-2,1-ethenediyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

CM 1

CRN 443971-32-2
CMF C23 H34 B2 O6

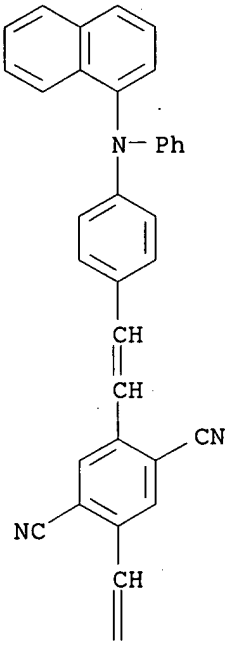


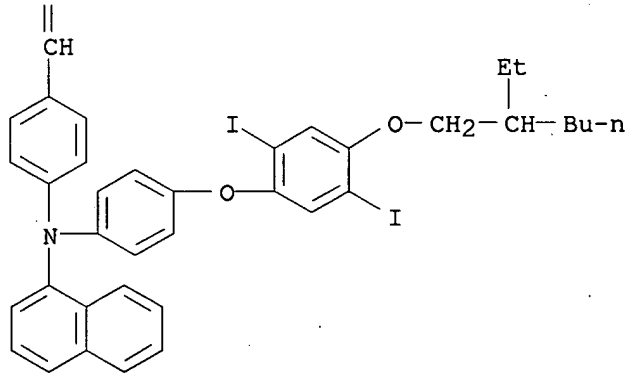

CM 2

CRN 443971-31-1
CMF C70 H56 I2 N4 O2

PAGE 1-A

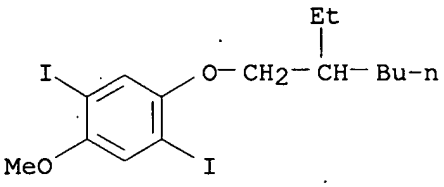



PAGE 2-A




CM 3

CRN 262355-67-9
CMF C15 H22 I2 O2

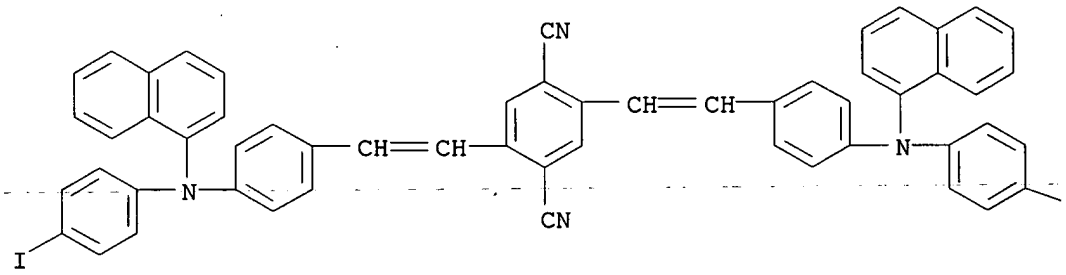



RN 443971-35-5 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-iodophenyl)-1-naphthalenylamino]phenyl]ethenyl]-, polymer with 1-[(2-ethylhexyl)oxy]-2,5-diiodo-4-methoxybenzene and 2,2'-[[2-[(2-ethylhexyl)oxy]-5-methoxy-1,4-phenylene]di-2,1-ethenediyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

CM 1

CRN 443971-34-4
CMF C56 H36 I2 N4

PAGE 1-A

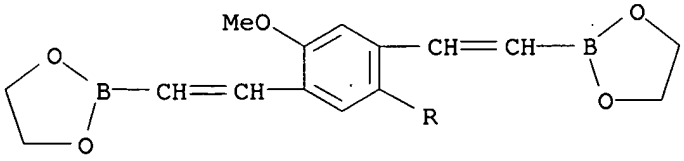


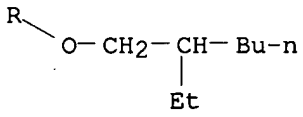

PAGE 1-B

I

CM 2

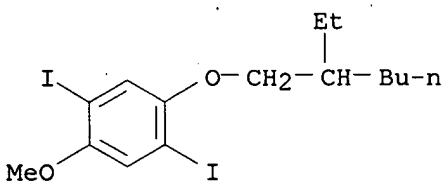
CRN 443971-32-2
CMF C23 H34 B2 O6





CM 3

CRN 262355-67-9
CMF C15 H22 I2 O2

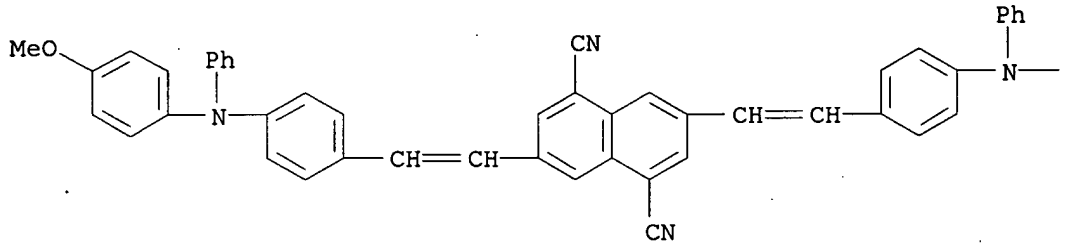


RN 443971-37-7 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 3-[2-[4-[[4-[4-[(2-ethylhexyl)oxy]-2,5-diiodophenoxy]phenyl]phenylamino]phenyl]ethenyl]-7-[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]-, polymer with 1-[(2-ethylhexyl)oxy]-2,5-diiodo-4-methoxybenzene and 2,2'-[[2-[(2-ethylhexyl)oxy]-5-methoxy-1,4-phenylene]di-2,1-ethenediyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

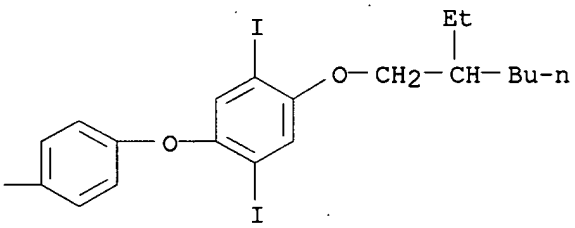
CM 1

CRN 443971-36-6
CMF C67 H56 I2 N4 O3

PAGE 1-A

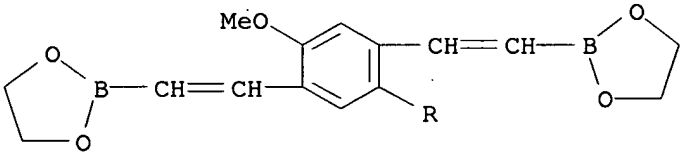


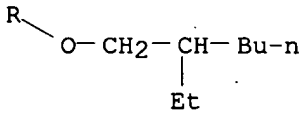

PAGE 1-B




CM 2

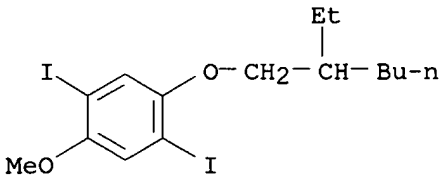
CRN 443971-32-2
CMF C23 H34 B2 O6




CM 3

CRN 262355-67-9
CMF C15 H22 I2 O2

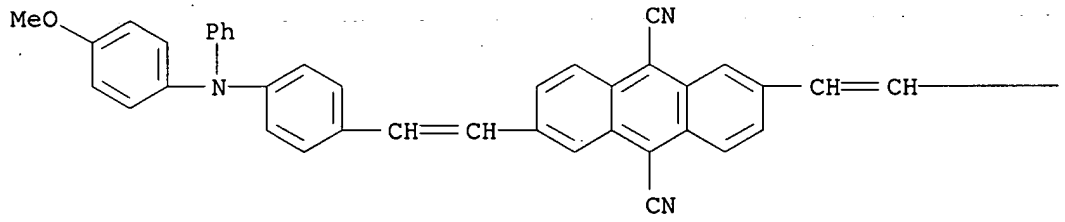


RN 443971-39-9 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2-[2-[4-[[4-[4-[(2-ethylhexyl)oxy]-2,5-diiodophenoxy]phenyl]phenylamino]phenyl]ethenyl]-6-[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]-, polymer with 1-[(2-ethylhexyl)oxy]-2,5-diiodo-4-methoxybenzene and 2,2'-[[2-[(2-ethylhexyl)oxy]-5-methoxy-1,4-phenylene]di-2,1-ethenediyl]bis[1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

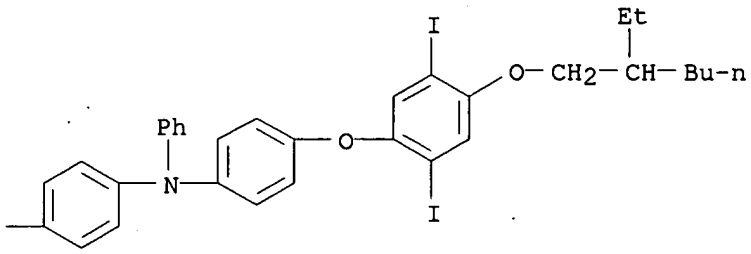
CM 1

CRN 443971-38-8
CMF C71 H58 I2 N4 O3

PAGE 1-A

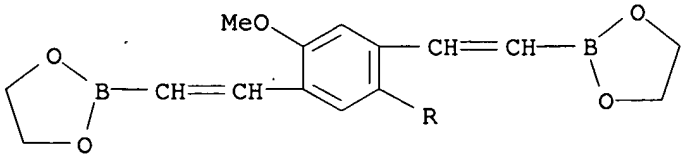


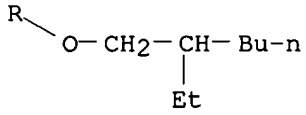
PAGE 1-B



CM 2

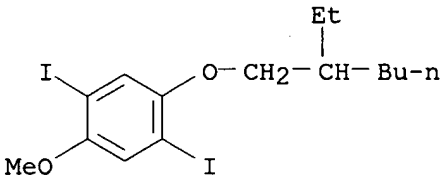
CRN 443971-32-2
CMF C23 H34 B2 O6





CM 3

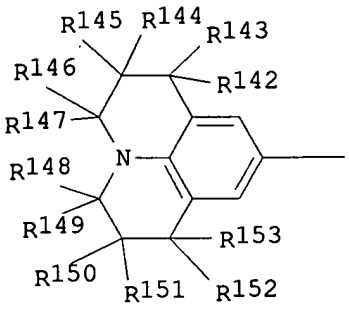
CRN 262355-67-9
CMF C15 H22 I2 O2



L22 ANSWER 5 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2002:349431 HCAPLUS
DN 136:377566
TI Red organic **electroluminescence** elements with good color stability and high brightness for displays
IN Ishibashi, Tadashi; Ichimura, Mari; Tamura, Shinichiro; Ueda, Naoyuki
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 31 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2002134276 | A2 | 20020510 | JP 2000-329902 | 20001030 |
| PRAI JP 2000-329902 | | 20001030 | | |

OS MARPAT 136:377566
GI




I

AB The **electroluminescence** (**EL**) elements contain aminostyryl compds. Y1CH:CHX1CH:CHY2 and/or Y3CH:CHX2 [X1 = substituted anthracenylene (substituent = halo, nitro, cyano, CF3, etc.); X2 = (un)substituted Ph, naphthalenyl, anthracenyl, phenanthrenyl, pyrenyl (substituent = H, halo, nitro, cyano, CF3); Y1-3 = H, alkyl, aryl that may contain C6H4NZ1Z2, I, or (un)substituted Ph; Z1, Z2 = H, alkyl, aryl; R142-153 = H, alkyl, aryl, alkoxy, halo, etc.].

ST org **electroluminescence** element red aminostyryl brightness; **EL** display aminostyryl phosphor red stability

IT Phosphors
(**electroluminescent**; red org. **EL** elements with good color stability and high brightness for displays)

IT **Electroluminescent** devices
(red-emitting; red org. **EL** elements with good color stability and high brightness for displays)

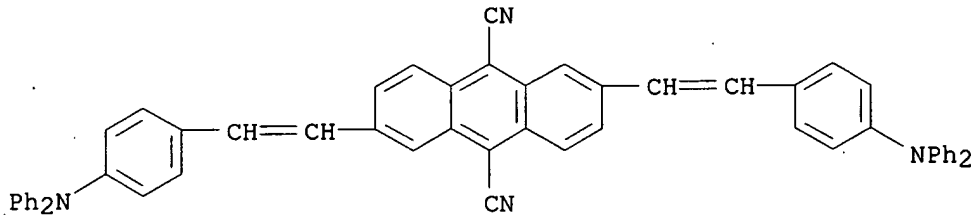
IT 4733-39-5
RL: TEM (Technical or engineered material use); USES (Uses)
(hole-blocking layer; red org. **EL** elements with good color stability and high brightness for displays)

IT 101247-14-7 127697-16-9 **253869-00-0 261632-47-7**
**261632-87-5 321709-39-1** 321735-48-2 321735-63-1
422510-46-1 422510-49-4 **422510-67-6 422510-70-1**
422510-72-3 422510-75-6 422510-76-7 422510-78-9 422510-81-4
422510-83-6 422510-84-7 422510-85-8
RL: TEM (Technical or engineered material use); USES (Uses)
(red org. **EL** elements with good color stability and high brightness for displays)

IT **253869-00-0 261632-47-7 261632-87-5**
**321709-39-1 422510-67-6 422510-70-1**
RL: TEM (Technical or engineered material use); USES (Uses)
(red org. **EL** elements with good color stability and high brightness for displays)

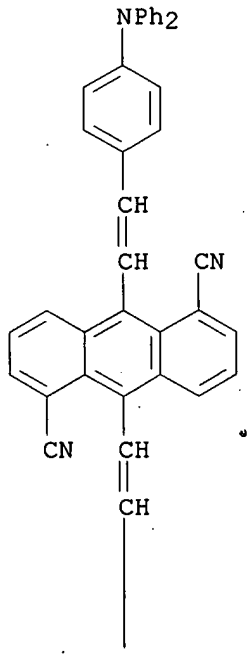
RN 253869-00-0 HCAPLUS

CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

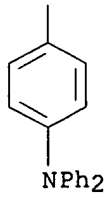



RN 261632-47-7 HCAPLUS
CN 1,5-Anthracenedicarbonitrile, 9,10-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

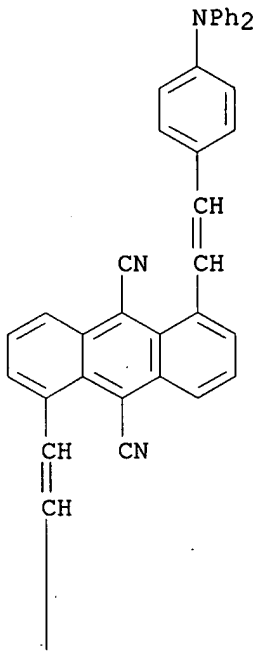



PAGE 2-A

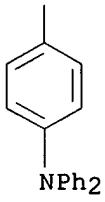



RN 261632-87-5 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 1,5-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

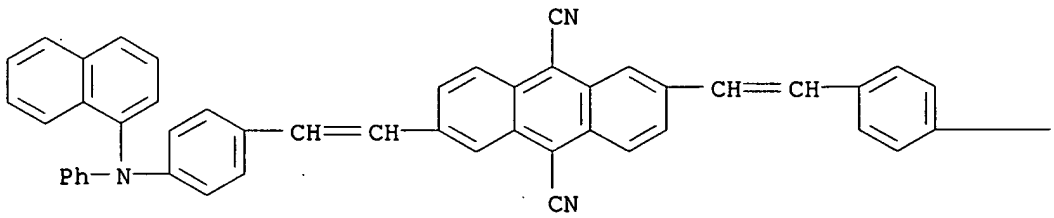



PAGE 2-A

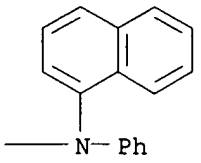



RN 321709-39-1 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

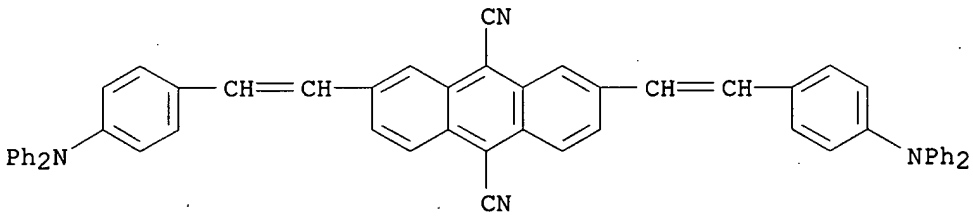
PAGE 1-A



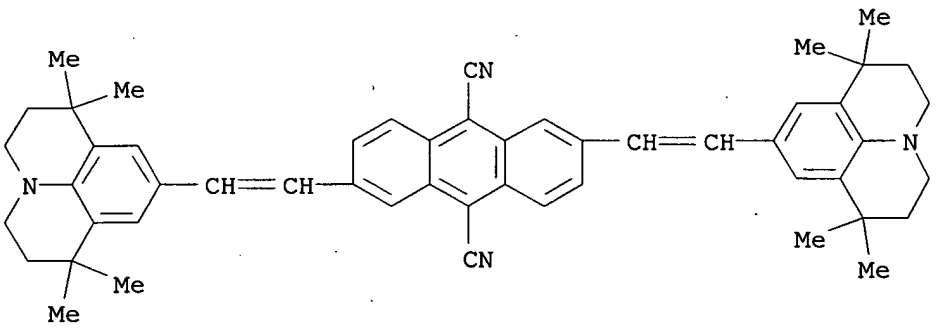
PAGE 1-B



RN 422510-67-6 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,7-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 422510-70-1 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-(2,3,6,7-tetrahydro-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)



L22 ANSWER 6 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:796642 HCAPLUS
DN 135:350271
TI Organic **electroluminescent** devices
IN Tominaga, Takeshi; Murase, Seiichiro; Kohama, Toru
PA Toray Industries, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 17 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C09K011-06
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related

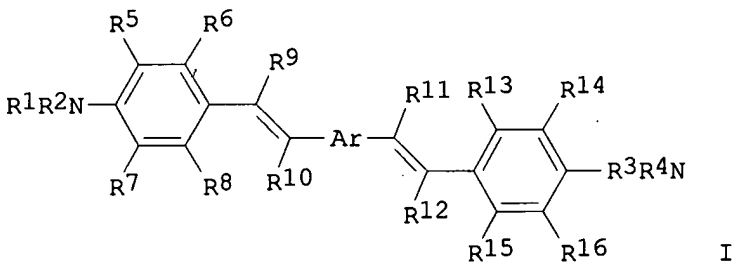
Properties)

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2001307884 | A2 | 20011102 | JP 2000-125277 | 20000426 |
| PRAI | JP 2000-125277 | | 20000426 | | |

OS MARPAT 135:350271

GI



I

AB The devices comprise a pair of electrodes interposing a phosphor layer (emitting a peak 580-720 nm) contg. a distyryl deriv. I [Ar = condensed arom. ring, benzene having electro-affinity; R1-4 = (substituted) aryl, alkyl; R5-16 = H, alkyl, alkoxy, halo, aryl, amino, cyano].

ST org distyryl deriv phosphor **electroluminescent** device

IT Anodes
Cathodes
Fluorescence
Glass substrates
**Luminescent** substances
(org. **electroluminescent** devices)

IT 7440-22-4, Silver, uses 50926-11-9, ITO 65181-78-4, TPD **232948-26-4 251101-60-7 253868-17-6**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** devices)

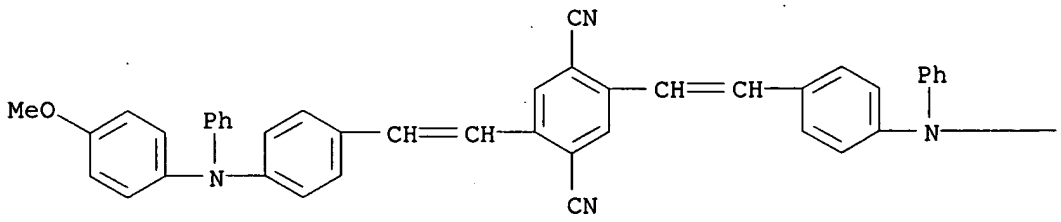
IT 355015-23-5 361377-25-5 371229-15-1
RL: MOA (Modifier or additive use); USES (Uses)
(org. **electroluminescent** devices)

IT **232948-26-4 251101-60-7 253868-17-6**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** devices)

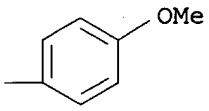
RN 232948-26-4 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

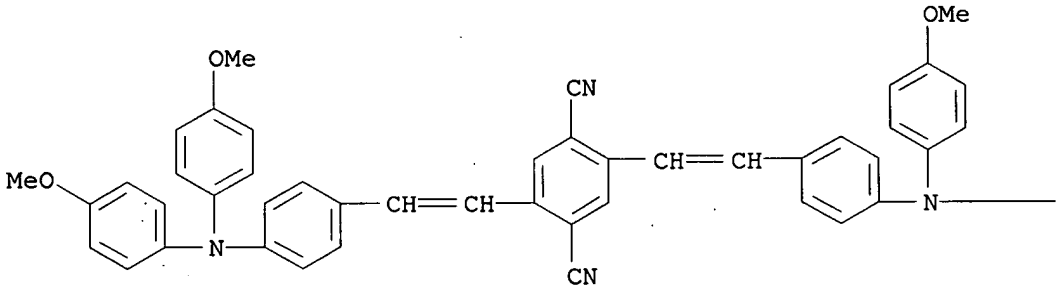


PAGE 1-B

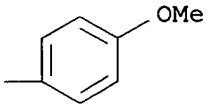



RN 251101-60-7 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

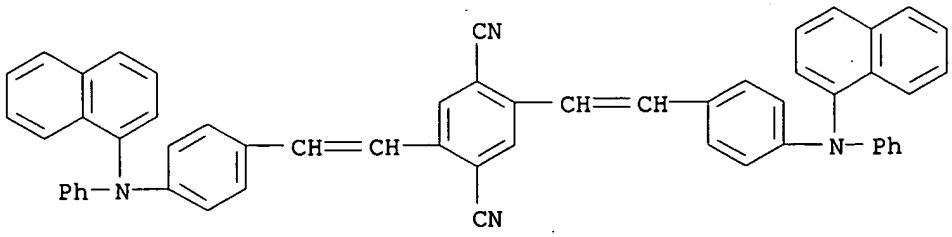
PAGE 1-A




PAGE 1-B




RN 253868-17-6 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)




L22 ANSWER 7 OF 27 HCAPLUS COPYRIGHT 2003 ACS

AN 2001:763124 HCAPLUS
DN 135:325069
TI Organic **electroluminescent** element and **luminescent** apparatus employing the same
IN Ishibashi, Tadashi; Ichimura, Mari; Ueda, Naoyuki; Tamura, Shinichiro
PA Sony Corporation, Japan
SO PCT Int. Appl., 102 pp.
CODEN: PIXXD2
DT Patent
LA Japanese
IC ICM C09K011-06
ICS H05B033-14; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

applicants

FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | WO 2001077253 | A1 | 20011018 | WO 2001-JP3051 | 20010409 |
| | W: KR, US | | | | |
| | RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR | | | | |
| | JP 2001291591 | A2 | 20011019 | JP 2000-106430 | 20000407 |
| | EP 1205528 | A1 | 20020515 | EP 2001-919842 | 20010409 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR | | | | |
| | US 2002106530 | A1 | 20020808 | US 2002-9021 | 20020319 |
| PRAI | JP 2000-106430 | A | 20000407 | | |
| | WO 2001-JP3051 | W | 20010409 | | |

OS MARPAT 135:325069

AB Title element contains a compd. having a high fluorescence yield and excellent thermal stability and emits a stable red light having a high color purity and a high luminance. Title element comprises a glass substrate and disposed thereon in this order, a transparent ITO electrode, a hole-transporting layer, an electron-transporting layer, and a metal electrode, wherein the hole-transporting layer and/or the electron-transporting layer comprises a layer of a mixt. comprising .gtoreq.1 aminostyryl compd. represented by the general formula Y1CH:CHX1CH:CHY2 (X1 = aryl substituented by such as NO2, etc., each Y1 and Y2 has aminophenyl, etc. in the skeleton) and a hole-blocking layer is disposed between the hole-transporting layer and the electron-transporting layer.

ST **electroluminescent** element app aminostyryl compd

IT **Electroluminescent** devices
(org. **electroluminescent** element and **luminescent** app. employing the same)

IT 4733-39-5 51325-91-8 123847-85-8, .alpha.-NPD **232948-26-4**
**251101-60-7 253868-17-6 253868-91-6**
**288626-78-8 288626-79-9 288626-80-2**
**288626-81-3 288626-82-4 288626-90-4**
**322475-09-2 333339-14-3 333339-15-4**
**333339-16-5 333339-20-1 367509-22-6**
**367509-23-7 367509-24-8 367509-25-9**
**367509-26-0 367509-27-1 367509-28-2**
**367509-29-3 367509-30-6 367509-31-7**
**367509-32-8 367509-33-9 367509-34-0**
**367509-35-1 367509-36-2 367509-37-3**
**367509-38-4 367509-39-5 367509-40-8**
**367509-41-9 367509-42-0**

RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** element and **luminescent** app. employing the same)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Idemitsu Kosan Company Limited; JP 02247278 A HCAPLUS
(2) Idemitsu Kosan Company Limited; JP 03231970 A HCAPLUS
(3) Idemitsu Kosan Company Limited; EP 388768 A2 1990 HCAPLUS
(4) Sony Corporation; JP 11329731 A HCAPLUS
(5) Sony Corporation; JP 200012226 A
(6) Sony Corporation; EP 960927 A2 1999 HCAPLUS
(7) Sony Corporation; EP 967834 A2 1999 HCAPLUS
(8) Sony Corporation; JP 200012224 A 2000

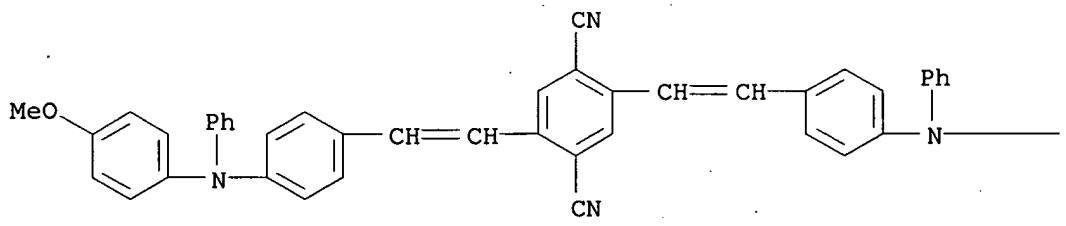
IT **232948-26-4 251101-60-7 253868-17-6 253868-91-6 288626-78-8 288626-79-9 288626-80-2 288626-81-3 288626-82-4 288626-90-4 322475-09-2 333339-14-3 333339-15-4 333339-16-5 333339-20-1 367509-22-6 367509-23-7 367509-24-8 367509-25-9 367509-26-0 367509-27-1 367509-28-2 367509-29-3 367509-30-6 367509-31-7 367509-32-8 367509-33-9 367509-34-0 367509-35-1 367509-36-2 367509-37-3 367509-38-4 367509-39-5 367509-40-8 367509-41-9 367509-42-0**

RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** element and **luminescent** app. employing the same)

RN 232948-26-4 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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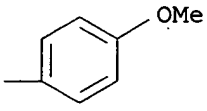
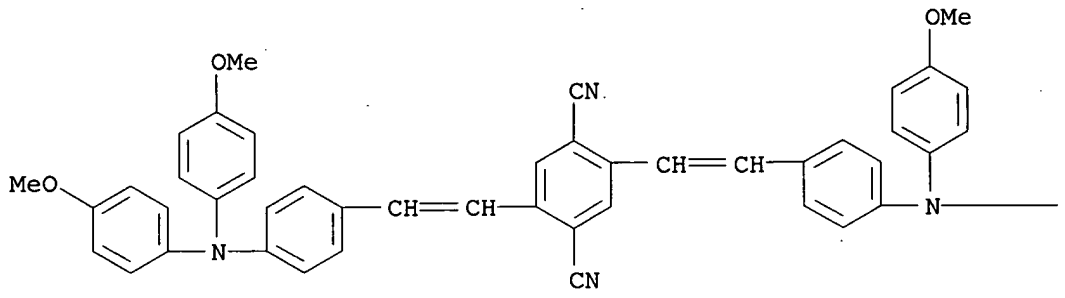



RN 251101-60-7 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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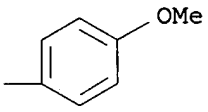


RN 253868-17-6 HCAPLUS
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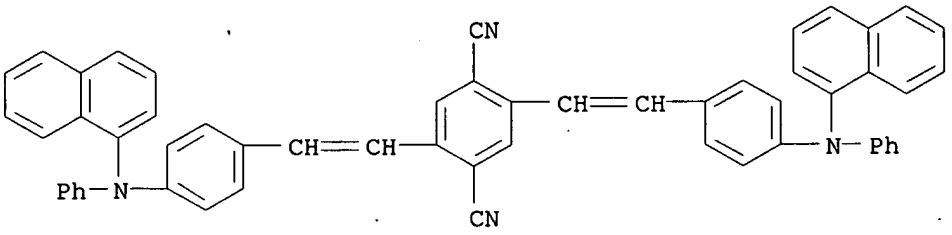


RN 253868-91-6 HCAPLUS
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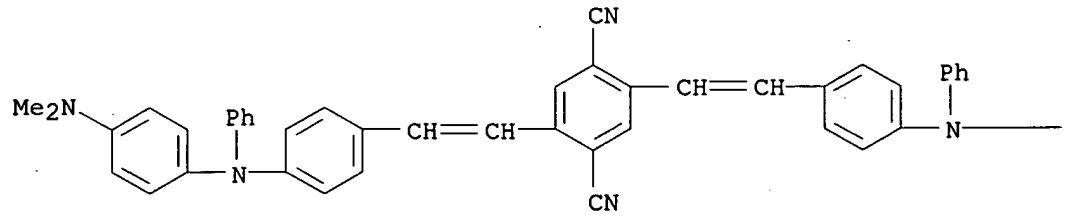
PAGE 1-A



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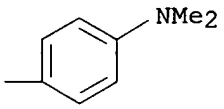
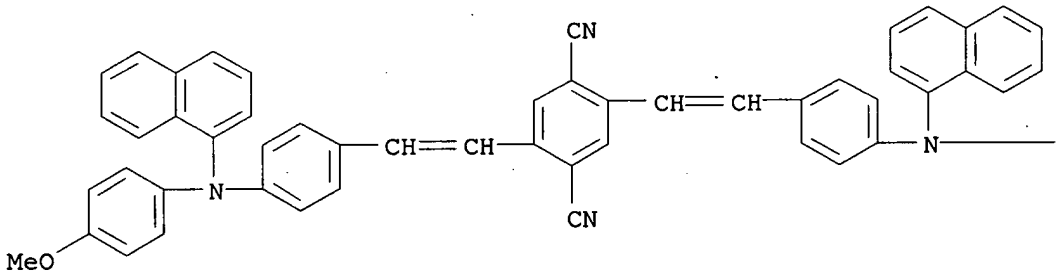



RN 288626-78-8 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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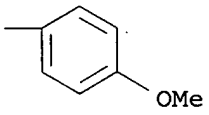


RN 288626-79-9 HCAPLUS
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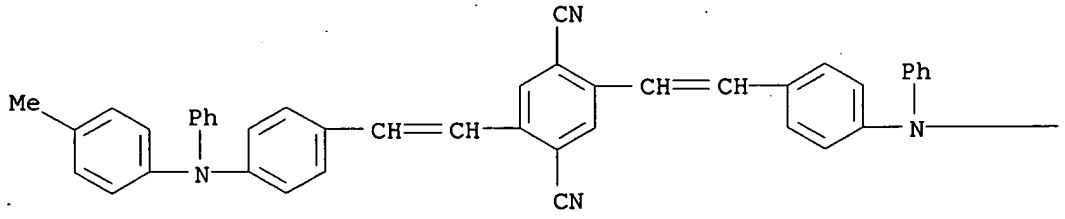
PAGE 1-A



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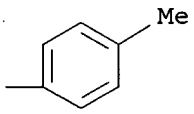


RN 288626-80-2 HCAPLUS
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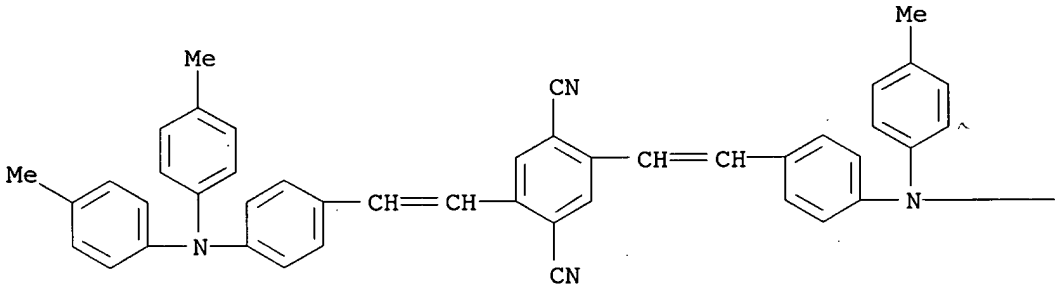
PAGE 1-A

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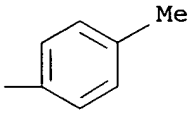
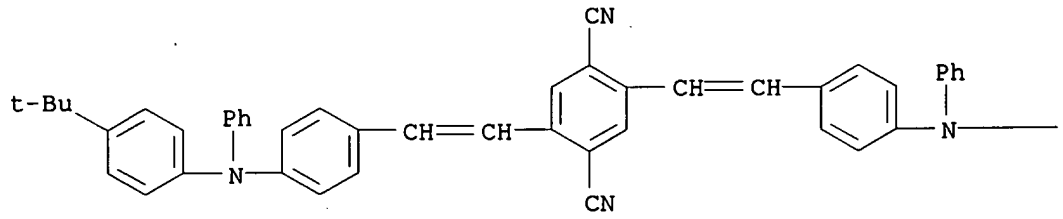



RN 288626-81-3 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(1,1-dimethylethyl)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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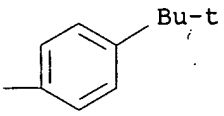
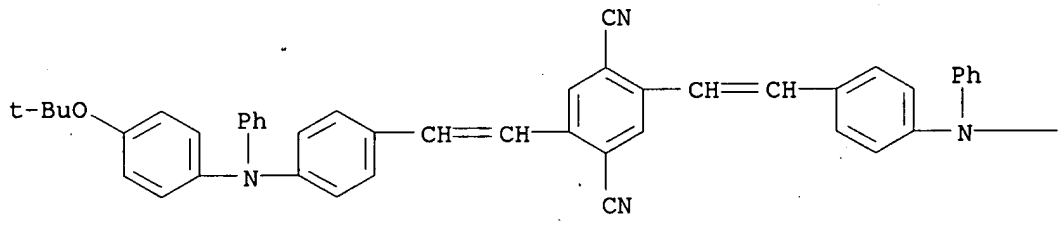



RN 288626-82-4 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(1,1-dimethylethoxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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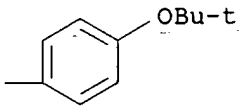
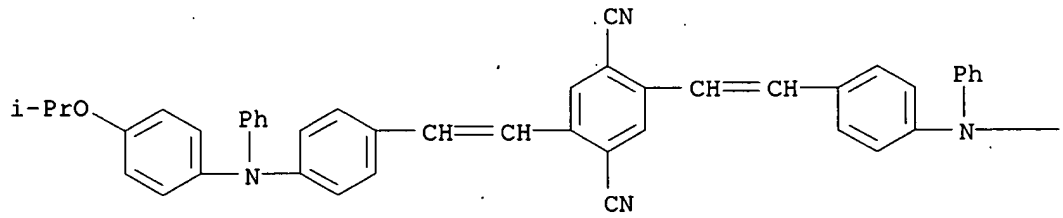



RN 288626-90-4 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(1-methylethoxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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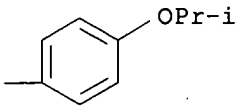
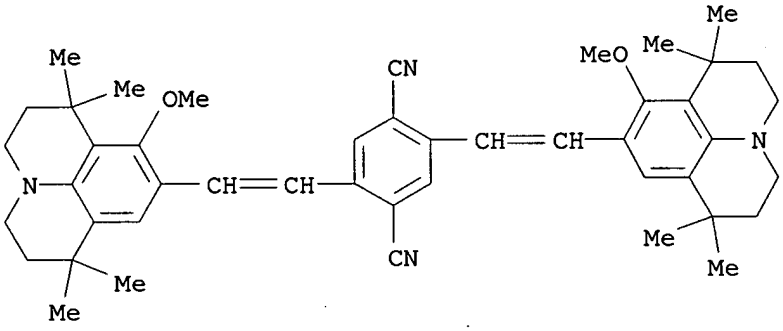



RN 322475-09-2 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-8-methoxy-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)




RN 333339-14-3 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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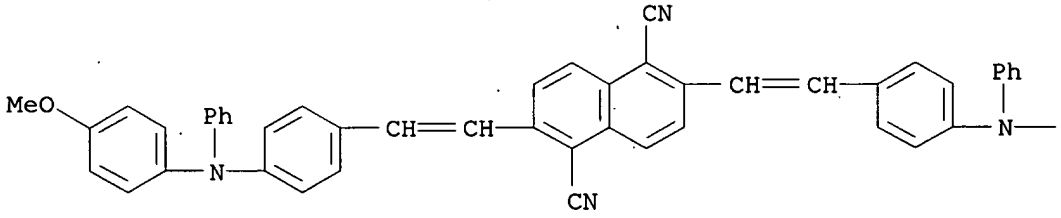


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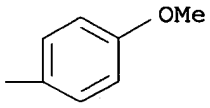
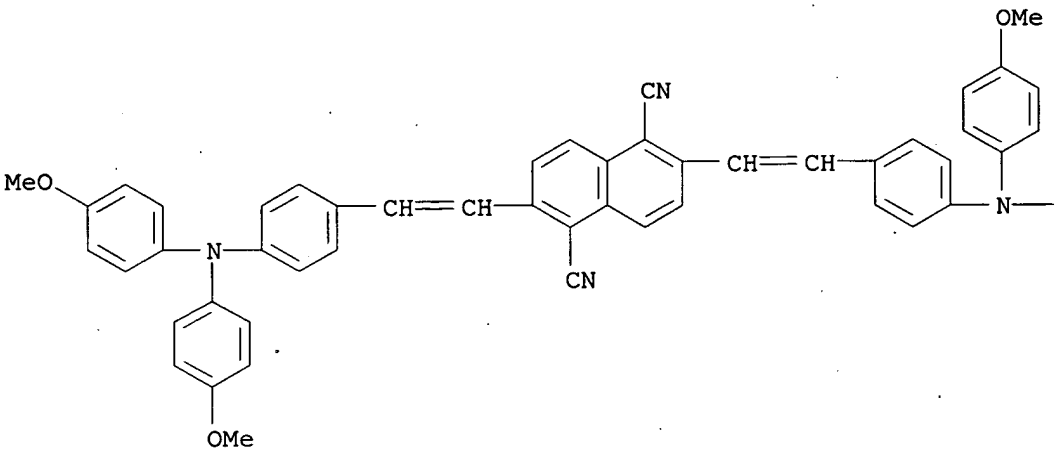



RN 333339-15-4 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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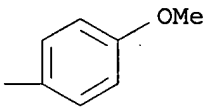


RN 333339-16-5 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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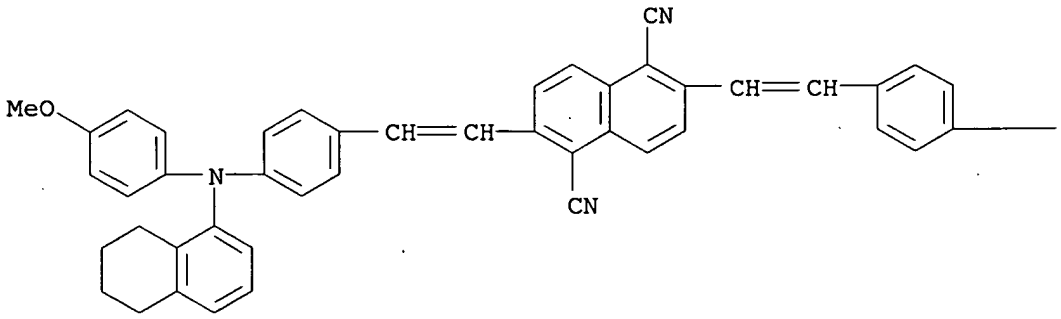

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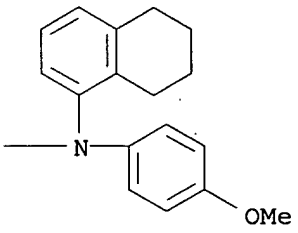
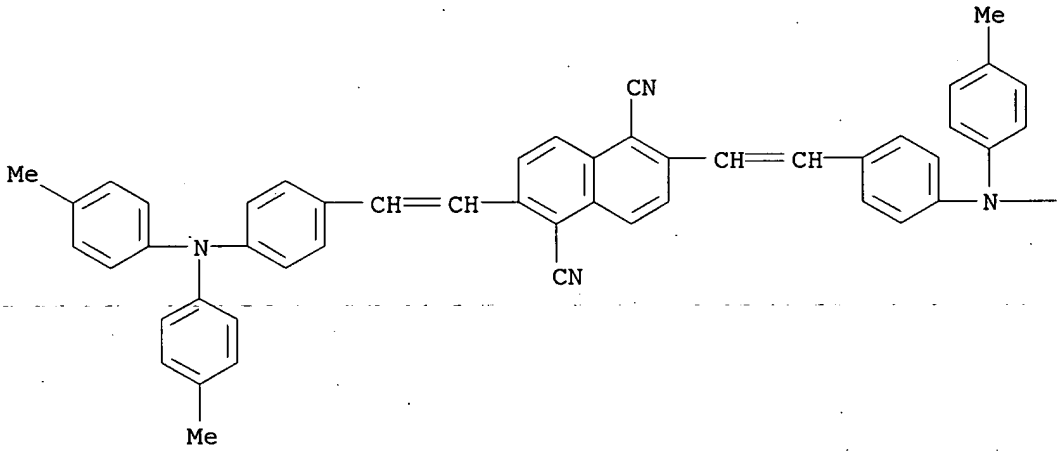



RN 333339-20-1 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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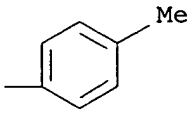
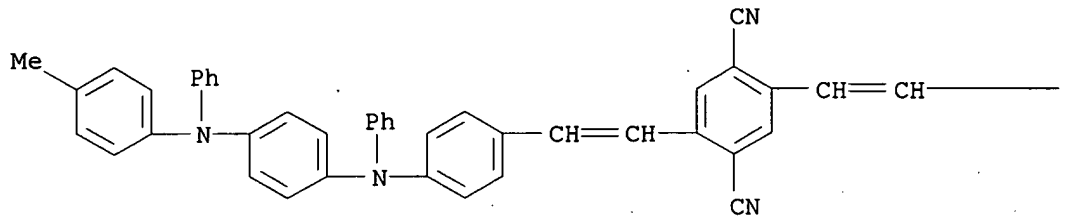



RN 367509-22-6 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-[(4-methylphenyl)phenylamino]phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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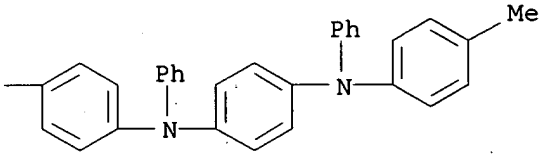
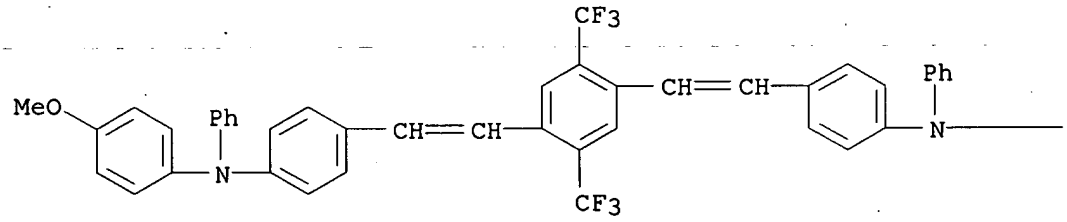



RN 367509-23-7 HCAPLUS
CN Benzenamine, 4,4'-[[2,5-bis(trifluoromethyl)-1,4-phenylene]di-2,1-ethenediyl]bis[N-(4-methoxyphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

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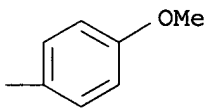
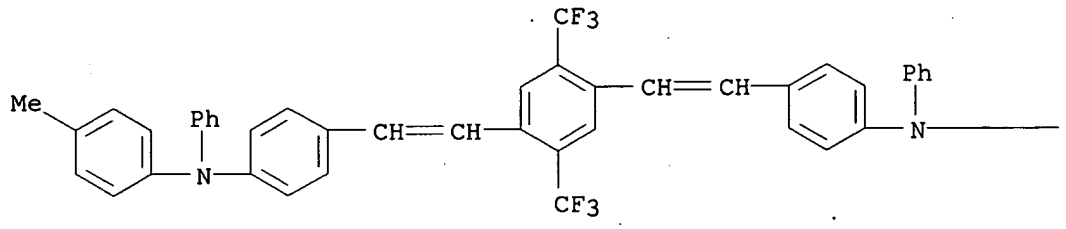



RN 367509-24-8 HCAPLUS
CN Benzenamine, 4,4'-[[2,5-bis(trifluoromethyl)-1,4-phenylene]di-2,1-ethenediyl]bis[N-(4-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

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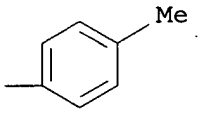
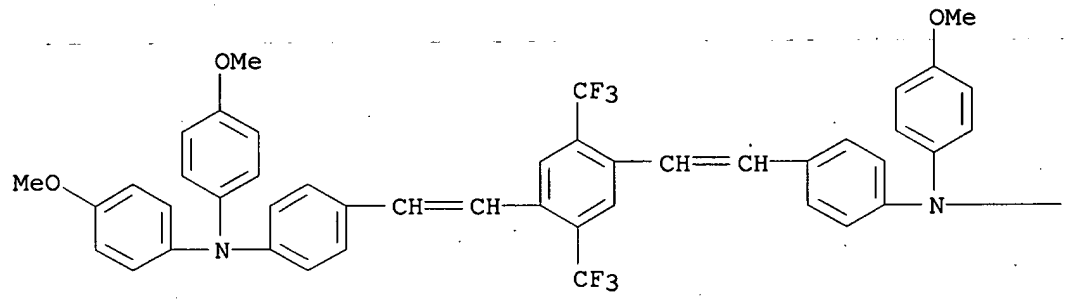



RN 367509-25-9 HCAPLUS
CN Benzenamine, 4,4'-[[2,5-bis(trifluoromethyl)-1,4-phenylene]di-2,1-ethenediyl]bis[N,N-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

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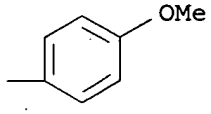
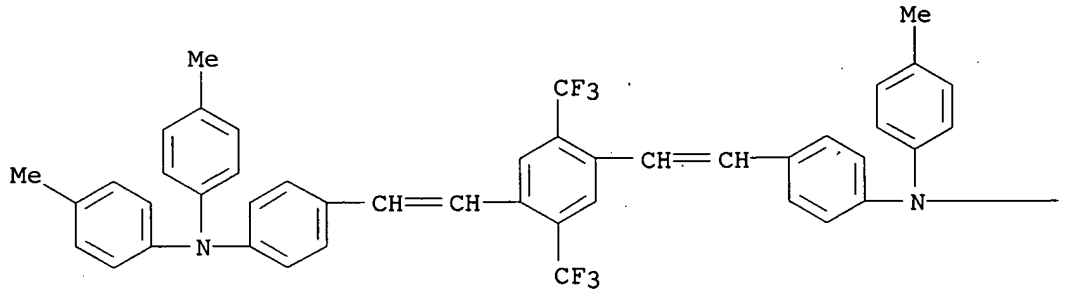



RN 367509-26-0 HCAPLUS
CN Benzenamine, 4,4'-[[2,5-bis(trifluoromethyl)-1,4-phenylene]di-2,1-ethenediyl]bis[N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

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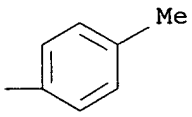


RN 367509-27-1 HCAPLUS
CN 1,4-Benzenediamine, N,N''-[[2,5-bis(trifluoromethyl)-1,4-phenylene]bis(2,1-ethenediyl-4,1-phenylene)]bis[N',N'-dimethyl-N-phenyl- (9CI) (CA INDEX NAME)

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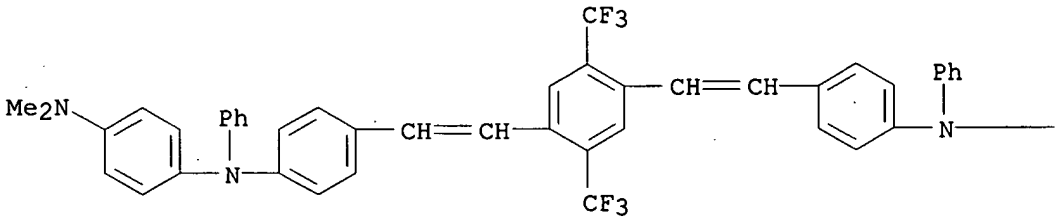


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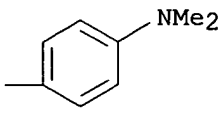


RN 367509-28-2 HCAPLUS
CN Benzenamine, 4,4'-[[2,5-bis(trifluoromethyl)-1,4-phenylene]di-2,1-ethenediyl]bis[N-[4-(1,1-dimethylethyl)phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

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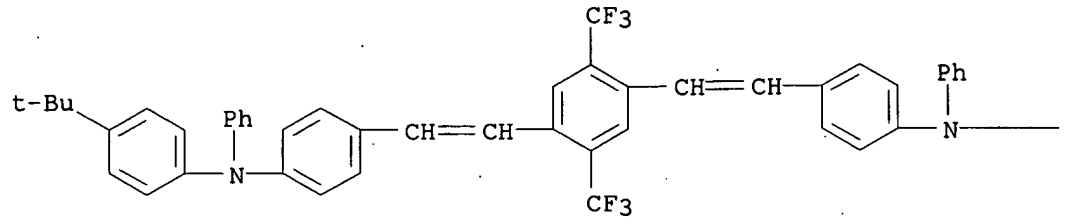


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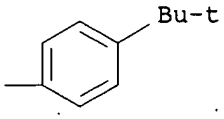


RN 367509-29-3 HCAPLUS
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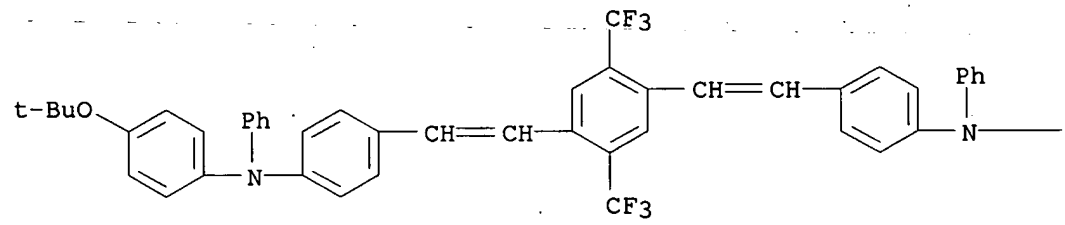


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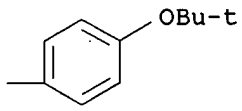
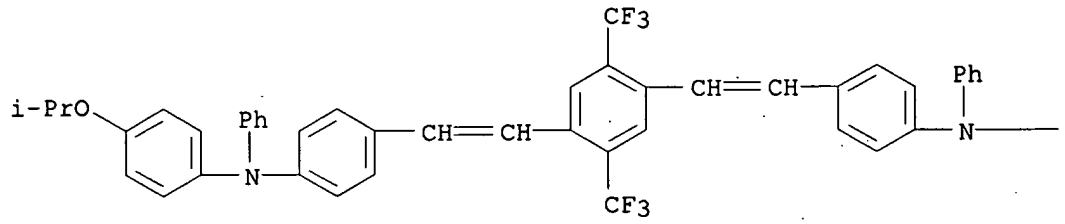



RN 367509-30-6 HCAPLUS
CN Benzenamine, 4,4'-[[2,5-bis(trifluoromethyl)-1,4-phenylene]di-2,1-ethenediyl]bis[N-[4-(1-methylethoxy)phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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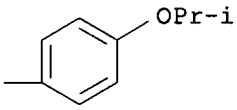
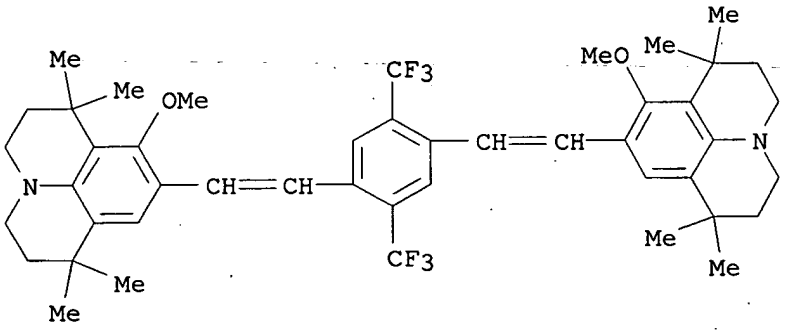
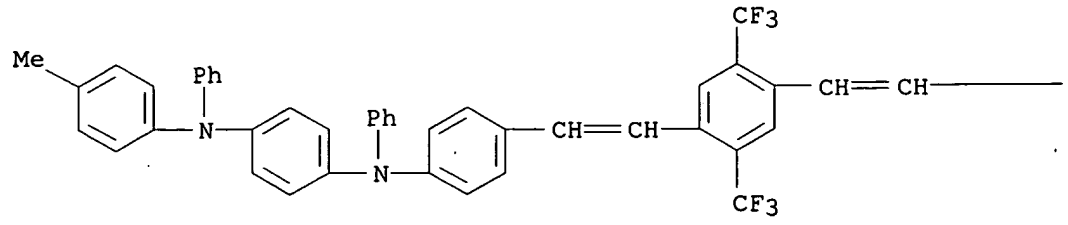


RN 367509-31-7 HCAPLUS
CN 1H,5H-Benzo[ij]quinolizine, 9,9'-[[2,5-bis(trifluoromethyl)-1,4-phenylene]di-2,1-ethenediyl]bis[2,3,6,7-tetrahydro-8-methoxy-1,1,7,7-tetramethyl- (9CI) (CA INDEX NAME)



RN 367509-32-8 HCAPLUS
CN 1,4-Benzenediamine, N,N''-[[2,5-bis(trifluoromethyl)-1,4-phenylene]bis(2,1-ethenediyl-4,1-phenylene)]bis[N'-(4-methylphenyl)-N,N'-diphenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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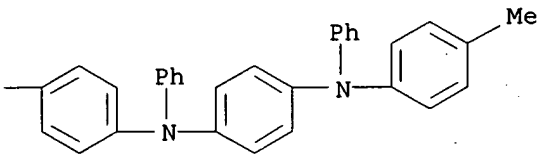
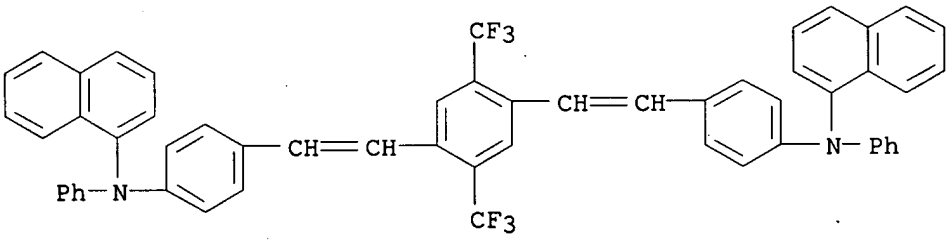
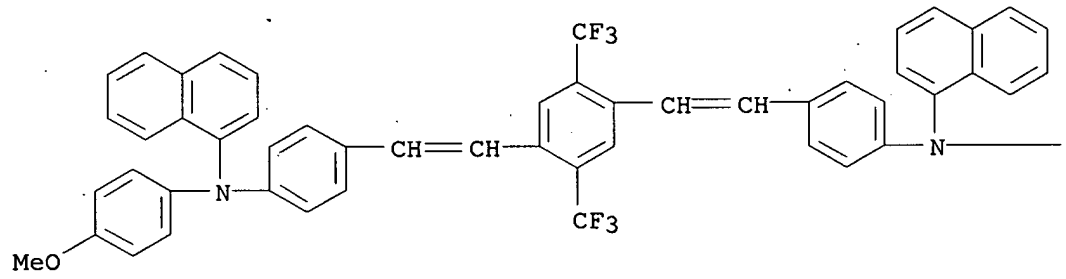



RN 367509-33-9 HCAPLUS
CN 1-Naphthalenamine, N,N'-[[2,5-bis(trifluoromethyl)-1,4-phenylene]bis(2,1-ethenediyl-4,1-phenylene)]bis[N-phenyl- (9CI) (CA INDEX NAME)




RN 367509-34-0 HCAPLUS
CN 1-Naphthalenamine, N,N'-[[2,5-bis(trifluoromethyl)-1,4-phenylene]bis(2,1-ethenediyl-4,1-phenylene)]bis[N-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

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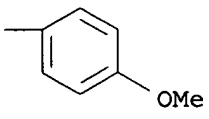
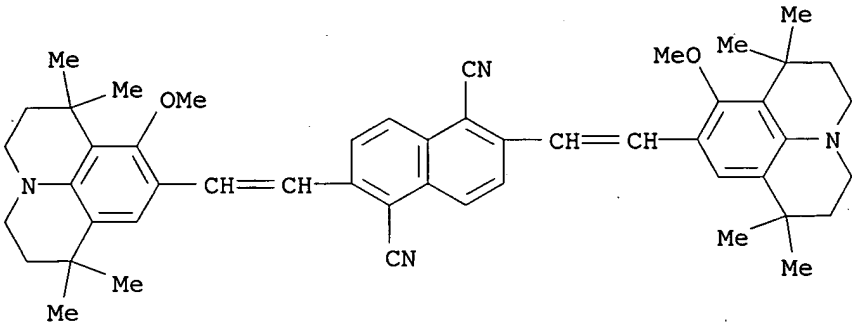
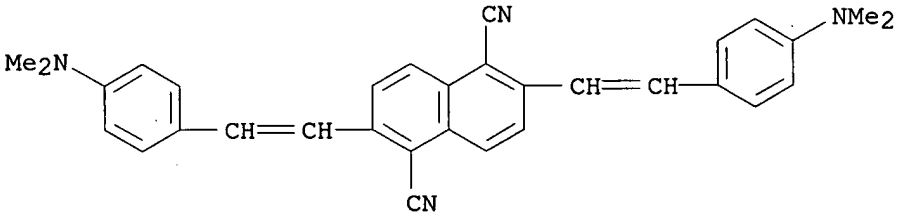



RN 367509-35-1 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-(2,3,6,7-tetrahydro-8-methoxy-

1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)

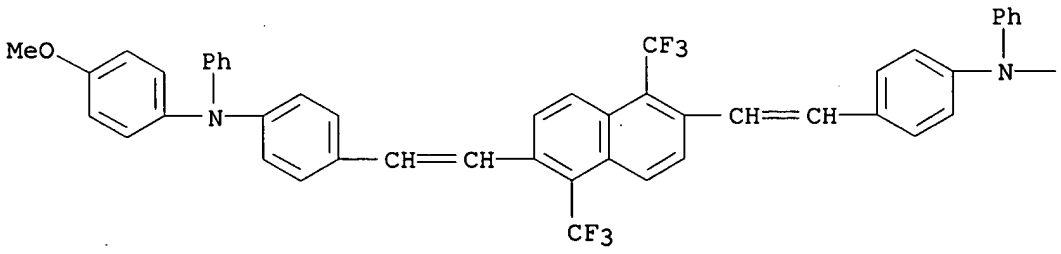


RN 367509-36-2 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-(dimethylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 367509-37-3 HCAPLUS
CN Benzenamine, 4,4'-[[1,5-bis(trifluoromethyl)-2,6-naphthalenediyl]di-2,1-ethenediyl]bis[N-(4-methoxyphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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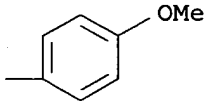
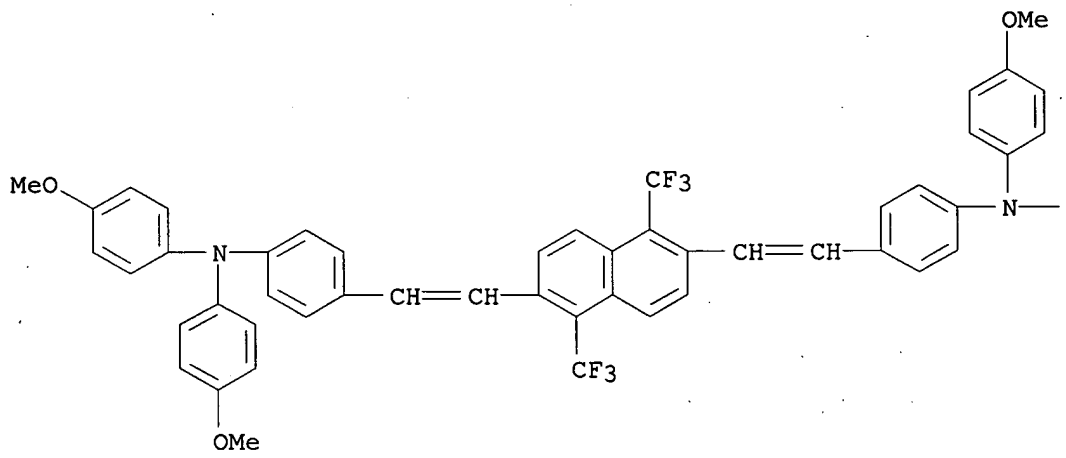


RN 367509-38-4 HCAPLUS

CN Benzenamine, 4,4'-[[1,5-bis(trifluoromethyl)-2,6-naphthalenediyl]di-2,1-ethenediyl]bis[N,N-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

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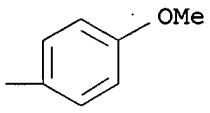
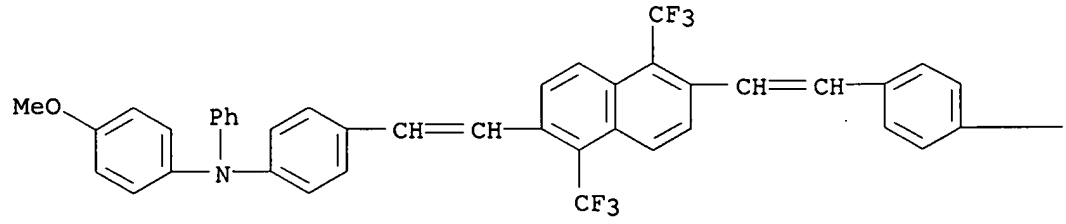



RN 367509-39-5 HCAPLUS

CN 1-Naphthalenamine, 5,6,7,8-tetrahydro-N-(4-methoxyphenyl)-N-[4-[2-[6-[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]-1,5-bis(trifluoromethyl)-2-naphthalenyl]ethenyl]phenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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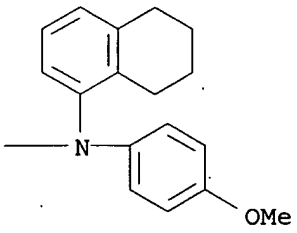
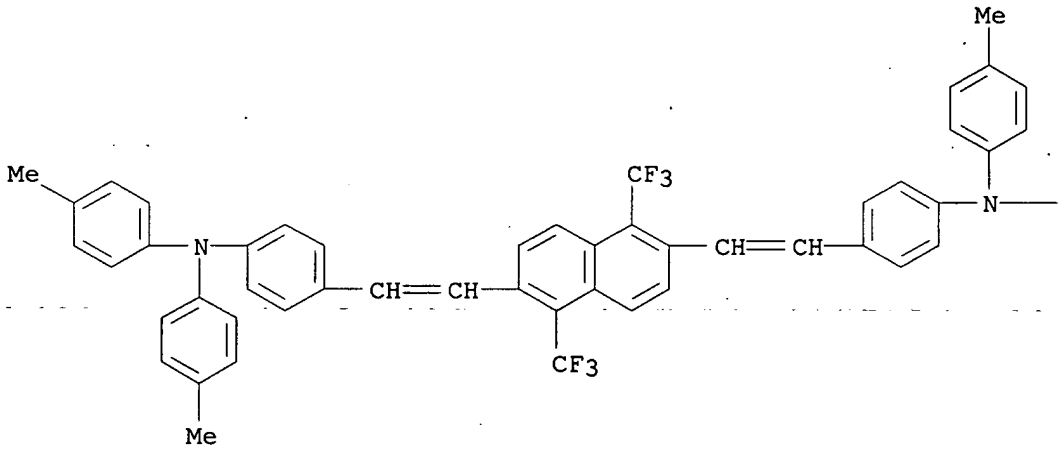
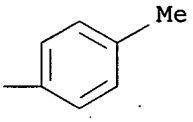



RN 367509-40-8 HCAPLUS
CN Benzenamine, 4,4'-[[1,5-bis(trifluoromethyl)-2,6-naphthalenediyl]di-2,1-ethenediyl]bis[N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

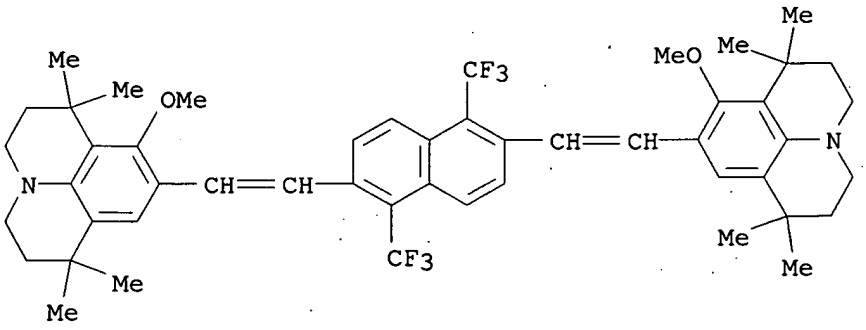
PAGE 1-A



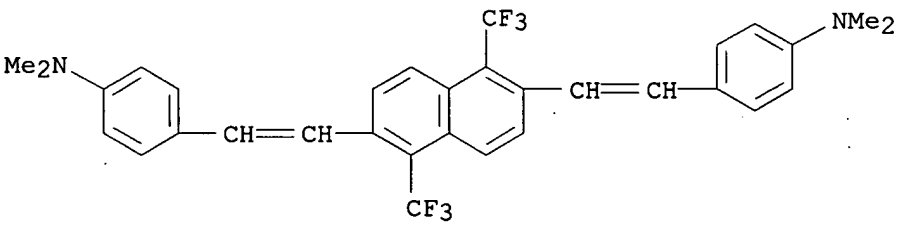

PAGE 1-B




RN 367509-41-9 HCAPLUS
CN 1H,5H-Benzo[ij]quinolizine, 9,9'-[[1,5-bis(trifluoromethyl)-2,6-naphthalenediyl]di-2,1-ethenediyl]bis[2,3,6,7-tetrahydro-8-methoxy-1,1,7,7-tetramethyl- (9CI) (CA INDEX NAME)



RN 367509-42-0 HCAPLUS
CN Benzenamine, 4,4'-[[1,5-bis(trifluoromethyl)-2,6-naphthalenediyl]di-2,1-ethenediyl]bis[N,N-dimethyl- (9CI) (CA INDEX NAME)



L22 ANSWER 8 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:538301 HCAPLUS
DN 135:272726
TI Synthesis, characterization, and optical response of dipolar and non-dipolar poly(phenylenevinylene) dendrimers
AU Diez-Barra, Enrique; Garcia-Martinez, Joaquin C.; Merino, Sonia; del Rey, Riansares; Rodriguez-Lopez, Julian; Sanchez-Verdu, Prado; Tejeda, Juan
CS Facultad de Quimica, Universidad de Castilla-La Mancha, Ciudad Real, 13071, Spain
SO Journal of Organic Chemistry (2001), 66(17), 5664-5670
CODEN: JOCEAH; ISSN: 0022-3263
PB American Chemical Society
DT Journal
LA English
CC 25-15 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 22, 29
AB New dipolar and non-dipolar poly(phenylenevinylene) dendrimers bearing electron-donating and electron-withdrawing groups have been efficiently synthesized using Heck and Horner-Wadsworth-Emmons reactions. The **photoluminescence** of these systems may be tuned in the blue zone by choosing the appropriate peripheral groups. Despite the meta-substitution pattern, large Stokes shifts can be obsd. when .pi.-donor and .pi.-acceptor groups are connected by a m-phenylenevinylene system.
ST polyphenylenevinylene dendrimer dipolar nondipolar prepn **photoluminescence** UV; phenylenevinylene poly denderimer prepn **photoluminescence** UV spectra; Heck reaction prepn polyphenylenevinylene dendrimer; Horner Wadsworth Emmons reaction prepn

polyphenylenevinylene dendrimer

IT Vinylation
(Heck; **photoluminescence** and UV spectra of poly(phenylenevinylene) dendrimers prepd. via Heck and Horner-Wadsworth-Emmons reactions)

IT Horner Wadsworth Emmons reaction
**Luminescence**
UV and visible spectra
(**photoluminescence** and UV spectra of poly(phenylenevinylene) dendrimers prepd. via Heck and Horner-Wadsworth-Emmons reactions)

IT 256386-08-0P
RL: BYP (Byproduct); PREP (Preparation)
(**photoluminescence** and UV spectra of poly(phenylenevinylene) dendrimers prepd. via Heck and Horner-Wadsworth-Emmons reactions)

IT 363622-78-0P 363622-79-1P 363622-84-8P
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**photoluminescence** and UV spectra of poly(phenylenevinylene) dendrimers prepd. via Heck and Horner-Wadsworth-Emmons reactions)

IT 34631-21-5P 100514-55-4P 348621-30-7P 348621-34-1P 363622-52-0P
363622-53-1P 363622-54-2P 363622-71-3P 363622-72-4P 363622-74-6P
363622-77-9P 363622-80-4P 363622-83-7P 363622-85-9P 363622-90-6P
363622-91-7P 363622-92-8P 363622-93-9P
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(**photoluminescence** and UV spectra of poly(phenylenevinylene) dendrimers prepd. via Heck and Horner-Wadsworth-Emmons reactions)

IT 122-52-1, Triethyl phosphite 556-96-7, 1-Bromo-3,5-dimethylbenzene
626-39-1, 1,3,5-Tribromobenzene 1611-92-3, 1,3-Dibromo-5-methylbenzene
2672-58-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(**photoluminescence** and UV spectra of poly(phenylenevinylene) dendrimers prepd. via Heck and Horner-Wadsworth-Emmons reactions)

IT 4464-18-0P, 1,3,5-Benzenetrimethanol 6566-57-0P 18226-42-1P,
1,3,5-Tris(bromomethyl)benzene 51760-23-7P 56908-88-4P 195209-24-6P
200809-09-2P 205578-74-1P 252188-95-7P 252188-96-8P 296795-92-1P
363622-48-4P 363622-49-5P 363622-50-8P 363622-51-9P 363622-70-2P
363622-86-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(**photoluminescence** and UV spectra of poly(phenylenevinylene) dendrimers prepd. via Heck and Horner-Wadsworth-Emmons reactions)

IT 363622-55-3P **363622-56-4P** 363622-57-5P 363622-58-6P
363622-59-7P 363622-60-0P 363622-61-1P 363622-62-2P 363622-63-3P
363622-64-4P 363622-65-5P 363622-66-6P 363622-67-7P 363622-68-8P
363622-69-9P 363622-73-5P 363622-75-7P 363622-81-5P 363622-82-6P
363622-87-1P 363622-88-2P 363622-89-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(**photoluminescence** and UV spectra of poly(phenylenevinylene) dendrimers prepd. via Heck and Horner-Wadsworth-Emmons reactions)

RE.CNT 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD

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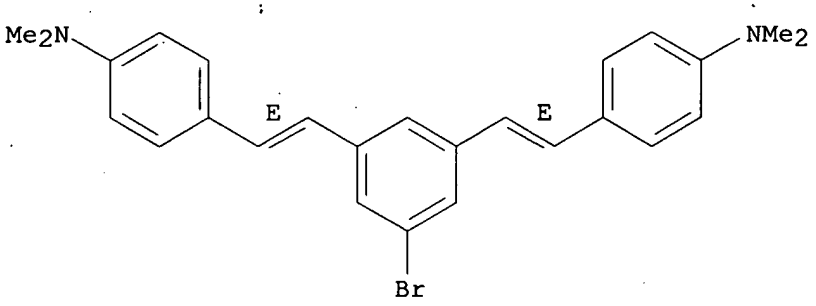
IT **363622-56-4P**

RL: SPN (Synthetic preparation); PREP (Preparation)

(**photoluminescence** and UV spectra of poly(phenylenevinylene) dendrimers prepd. via Heck and Horner-Wadsworth-Emmons reactions)

RN 363622-56-4 HCAPLUS
CN Benzenamine, 4,4'-[(5-bromo-1,3-phenylene)di-(1E)-2,1-ethenediyl]bis[N,N-dimethyl- (9CI) (CA INDEX NAME)

Double bond geometry as shown.




L22 ANSWER 9 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:269310 HCAPLUS
DN 134:280613
TI Preparation of **luminescent** bis(aminostyryl)naphthalenes and their intermediates
IN Ichimura, Mari; Ishibashi, Tadashi; Tamura, Shinichiro
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 81 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07C211-54
ICS C07C255-58; C07F009-40; C07F009-54; C09K011-06; H05B033-14
CC 25-24 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 74
FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2001106658 | A2 | 20010417 | JP 1999-285255 | 19991006 |
| | EP 1092704 | A2 | 20010418 | EP 2000-121753 | 20001005 |
| | EP 1092704 | A3 | 20010425 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | US 6492557 | B1 | 20021210 | US 2000-680386 | 20001005 |
| | US 2003069448 | A1 | 20030410 | US 2002-231355 | 20020829 |
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OS CASREACT 134:280613; MARPAT 134:280613
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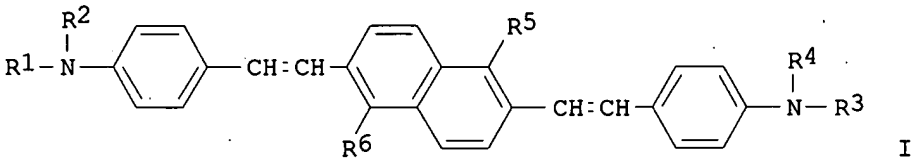


I

AB Title compds. I [R1-R4 = (un)substituted aryl; R5, R6 = H, cyano, NO2, CF3, halo], useful for **electroluminescent** devices, and their intermediates are prepd. 1,5-Dicyano-2,6-bis(diethoxyphosphorylmethyl)naphthalene (prepn. given) was treated with NaH followed by p-MeOC6H4NPhC6H4CHO-p in THF/DMF at room temp. for 10 h to give 20% I (R1 = R4 = C6H4OMe-p, R2 = R3 = Ph, R5 = R6 = cyano) having visible absorption max. at 493 nm and fluorescence max. at 545 nm.

ST aminostyrylnaphthalene fluorescent prepn **electroluminescent** device; naphthalene bisaminostyryl prepn **electroluminescent** device; Wittig reaction benzaldehyde naphthalene phosphonate

IT **Electroluminescent** devices
Fluorescent substances
(prepn. of **luminescent** bis(aminostyryl)naphthalenes for **electroluminescent** devices)

IT 122-52-1, Triethyl phosphite 36063-00-0 87755-82-6 89115-20-8 288627-01-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of **luminescent** bis(aminostyryl)naphthalenes for **electroluminescent** devices)

IT 333339-13-2P 333339-17-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of **luminescent** bis(aminostyryl)naphthalenes for **electroluminescent** devices)

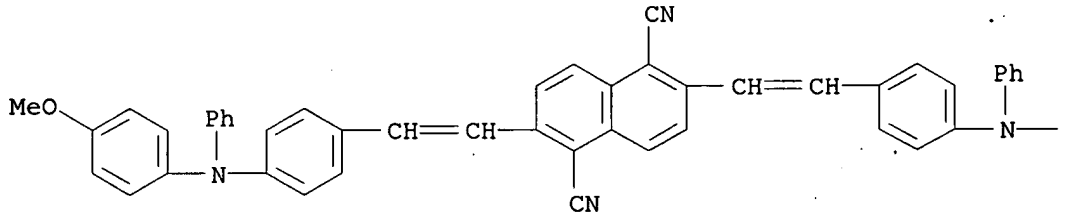
IT 62555-81-1P 63804-66-0P **333339-14-3P 333339-15-4P**
**333339-16-5P 333339-18-7P 333339-19-8P**
**333339-20-1P 333339-21-2P 333339-22-3P**
**333339-23-4P 333339-24-5P 333339-25-6P**
**333339-26-7P 333339-27-8P 333339-28-9P**
**333339-29-0P 333339-30-3P 333339-31-4P**
**333339-32-5P 333339-34-7P 333339-35-8P**
**333339-36-9P 333339-37-0P 333339-38-1P**
**333339-39-2P 333339-40-5P 333339-41-6P**
**333339-42-7P 333339-43-8P 333339-44-9P**
333339-45-0P 333339-46-1P 333339-47-2P 333339-48-3P 333339-49-4P
333339-50-7P 333339-51-8P 333339-52-9P 333339-53-0P 333339-54-1P
333339-55-2P 333339-56-3P 333339-57-4P **333340-62-8P**
**333340-65-1P 333340-67-3P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. of **luminescent** bis(aminostyryl)naphthalenes for **electroluminescent** devices)

IT **333339-14-3P 333339-15-4P 333339-16-5P**
**333339-18-7P 333339-19-8P 333339-20-1P**
**333339-21-2P 333339-22-3P 333339-23-4P**
**333339-24-5P 333339-25-6P 333339-26-7P**
**333339-27-8P 333339-28-9P 333339-29-0P**
**333339-30-3P 333339-31-4P 333339-32-5P**

**333339-34-7P 333339-35-8P 333339-36-9P**
**333339-37-0P 333339-38-1P 333339-39-2P**
**333339-40-5P 333339-41-6P 333339-42-7P**
**333339-43-8P 333339-44-9P 333340-62-8P**
**333340-65-1P 333340-67-3P**
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(prepn. of **luminescent** bis(aminostyryl)naphthalenes for **electroluminescent** devices)

RN 333339-14-3 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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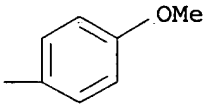
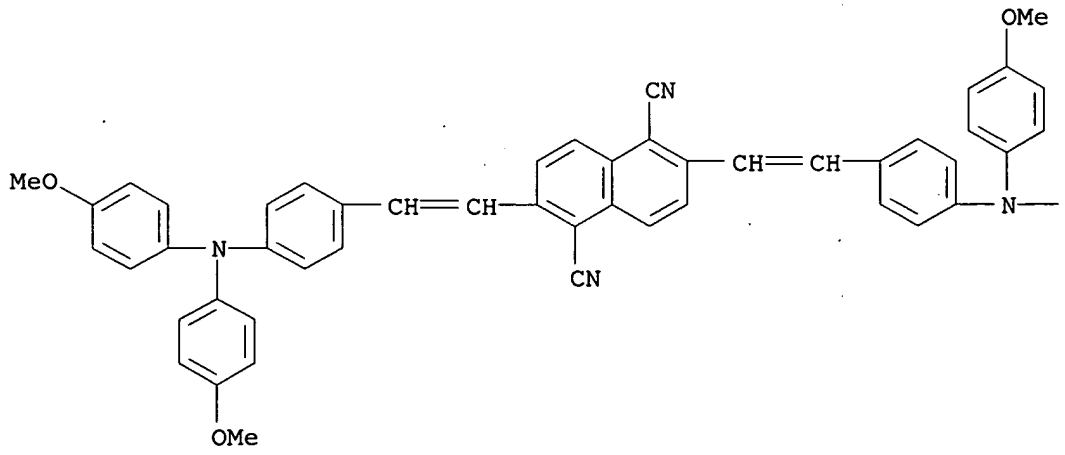



RN 333339-15-4 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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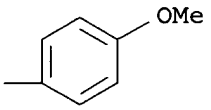


RN 333339-16-5 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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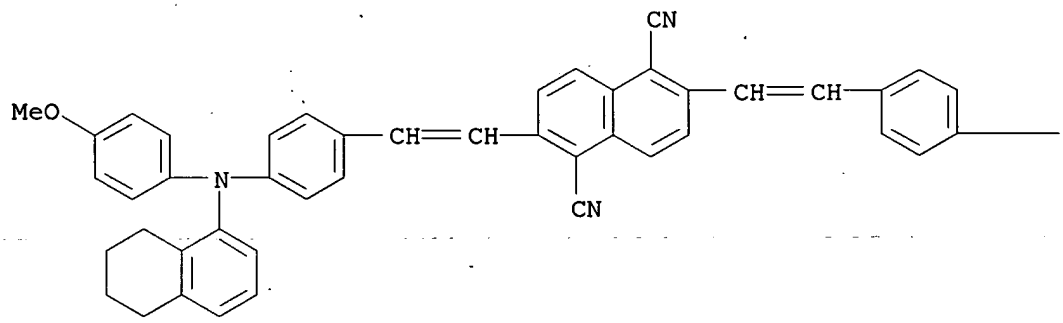


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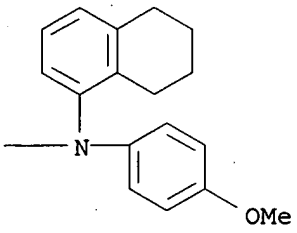
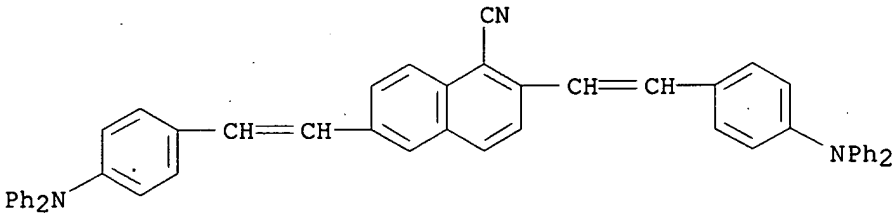



RN 333339-18-7 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 333339-19-8 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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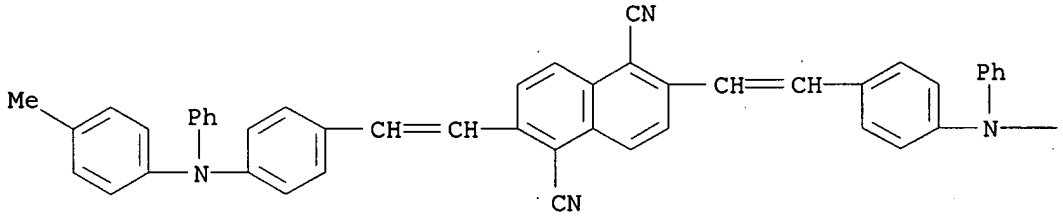

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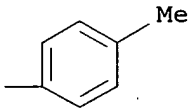

RN 333339-20-1 HCAPLUS
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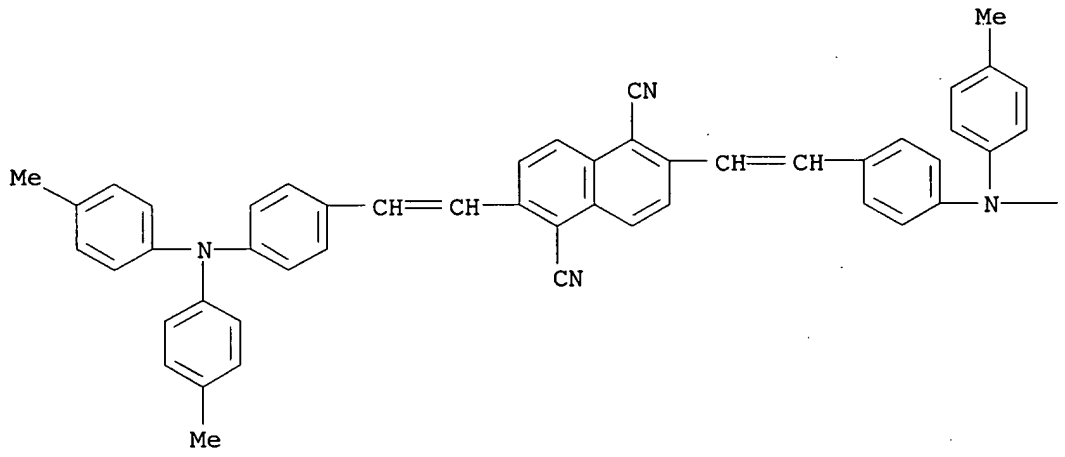


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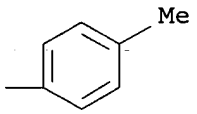


RN 333339-21-2 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[[4-(dimethylamino)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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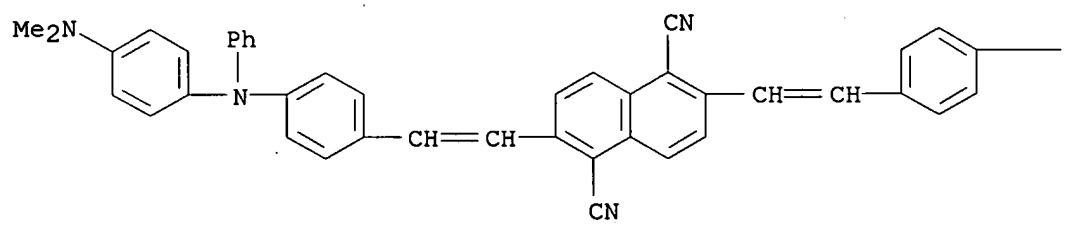


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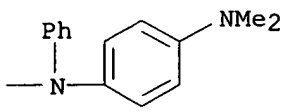
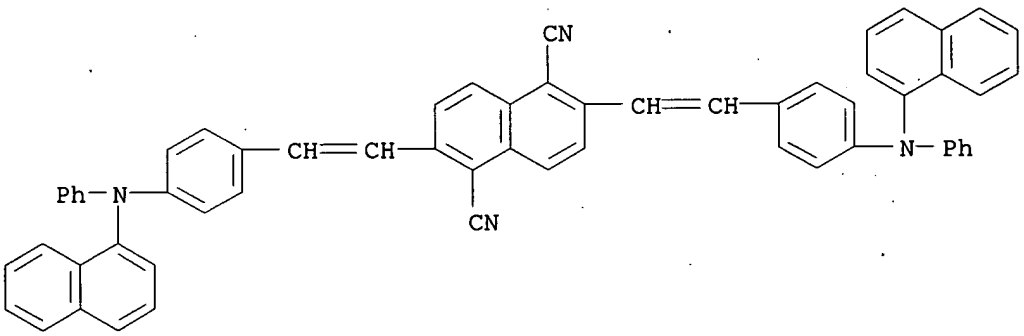


RN 333339-22-3 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)




RN 333339-23-4 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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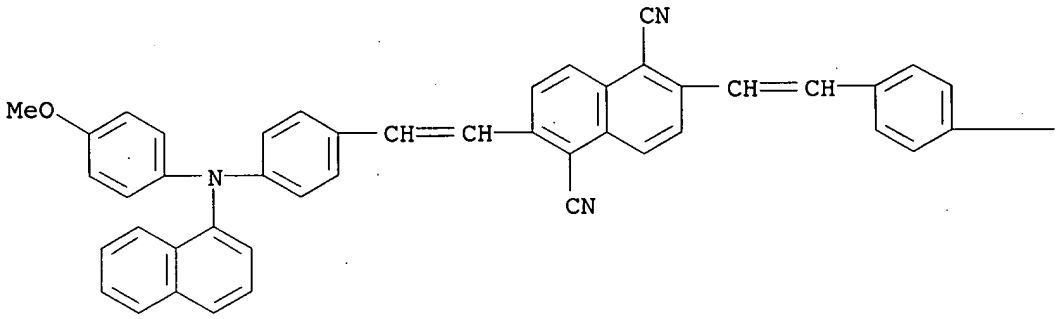


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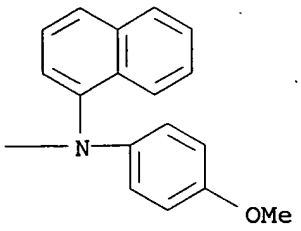
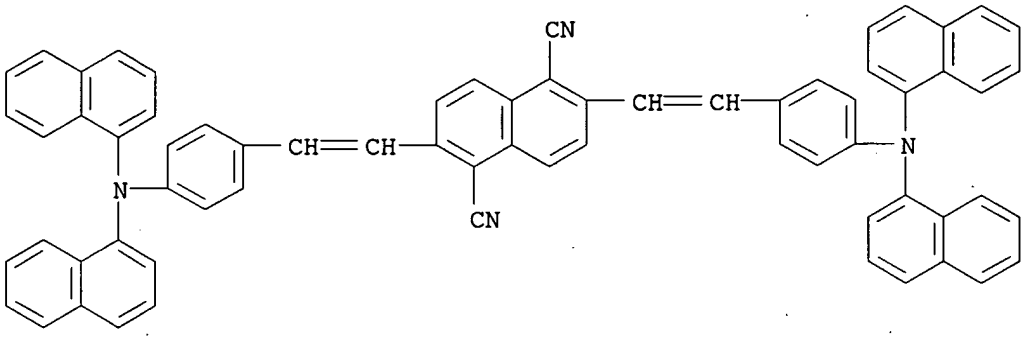



RN 333339-24-5 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-(di-1-naphthalenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)




RN 333339-25-6 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-cyclohexylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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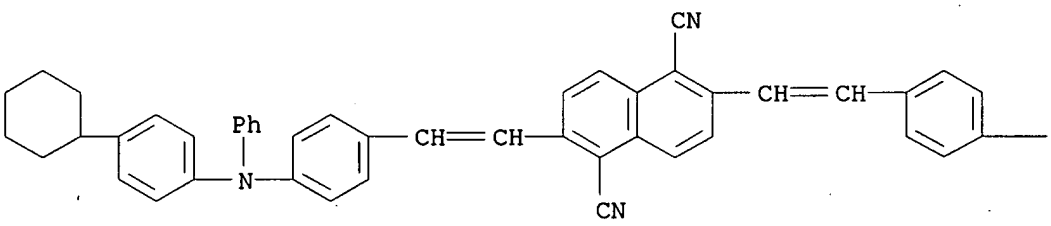


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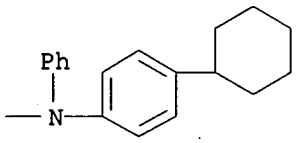


RN 333339-26-7 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[[4-(cyclohexyloxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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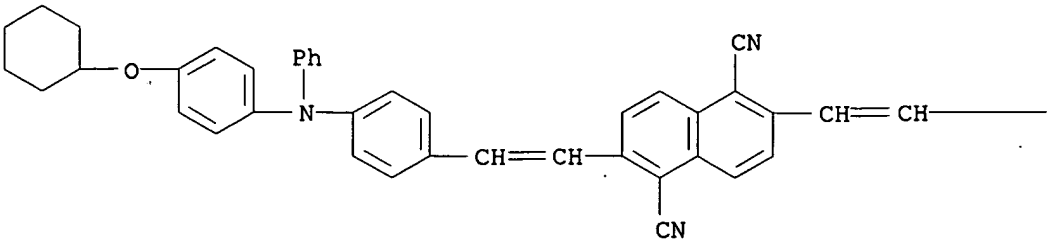

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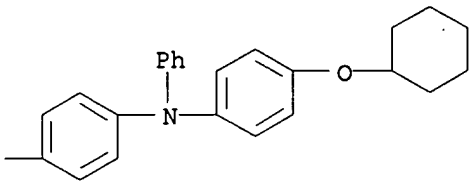
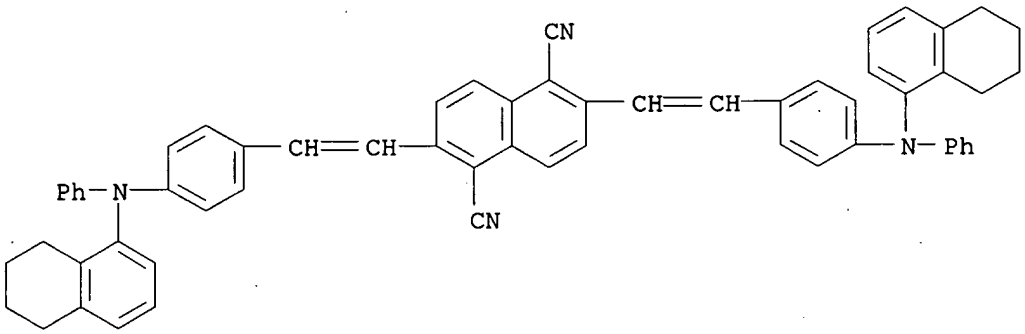



RN 333339-27-8 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)




RN 333339-28-9 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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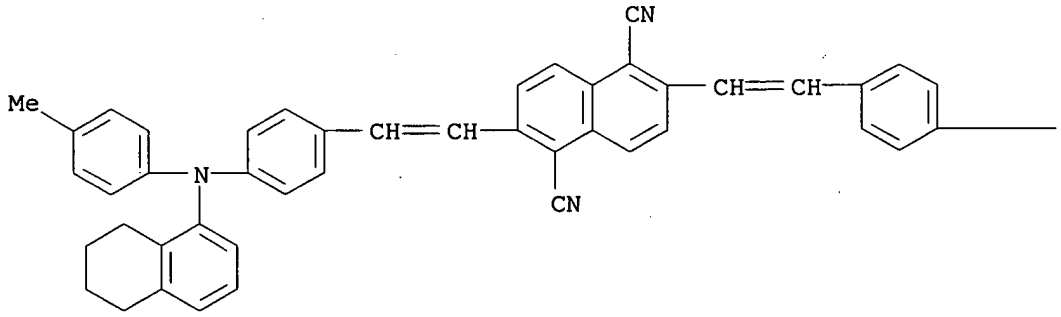

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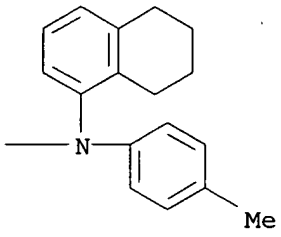
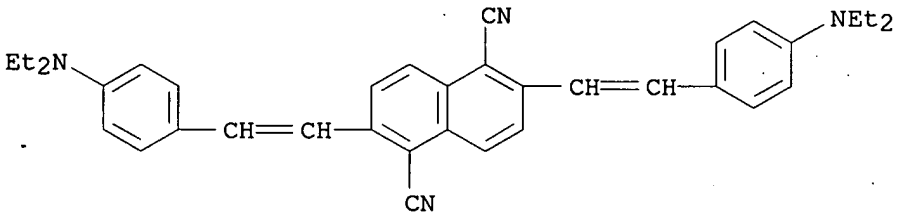



RN 333339-29-0 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-(diethylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)




RN 333339-30-3 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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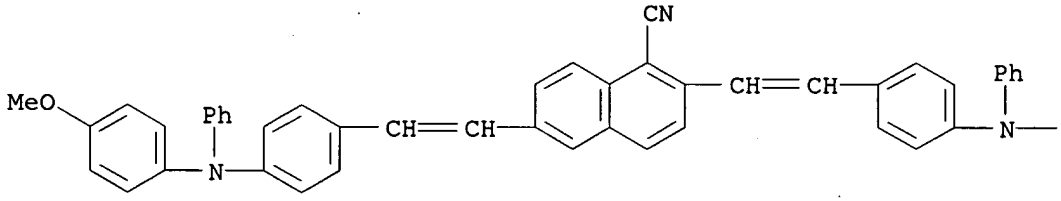


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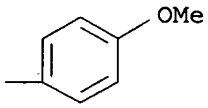


RN 333339-31-4 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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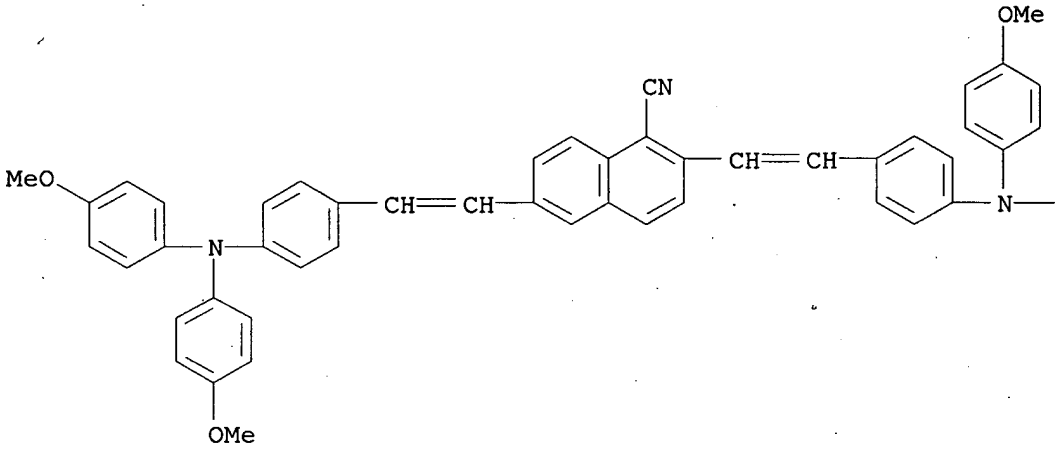


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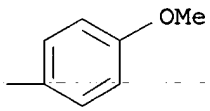


RN 333339-32-5 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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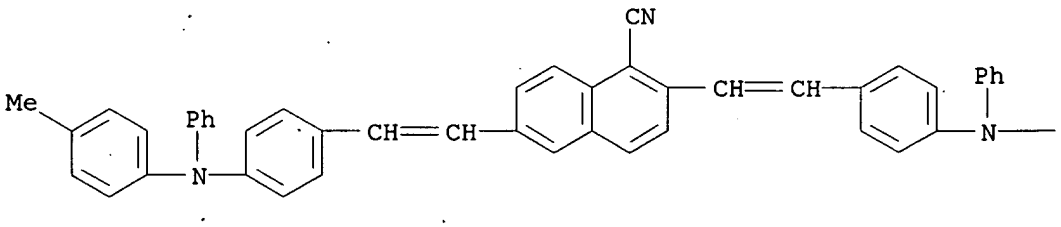


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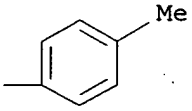

RN 333339-34-7 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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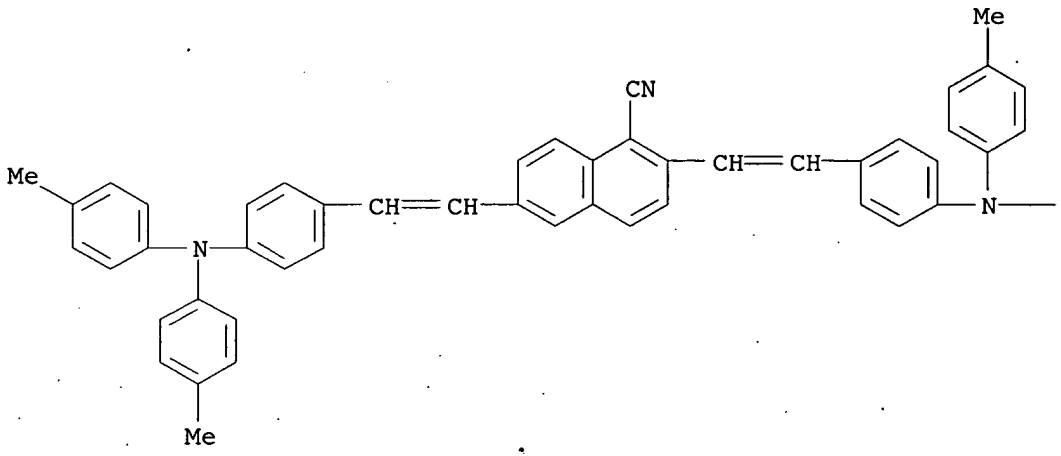


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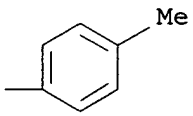


RN 333339-35-8 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[[4-(dimethylamino)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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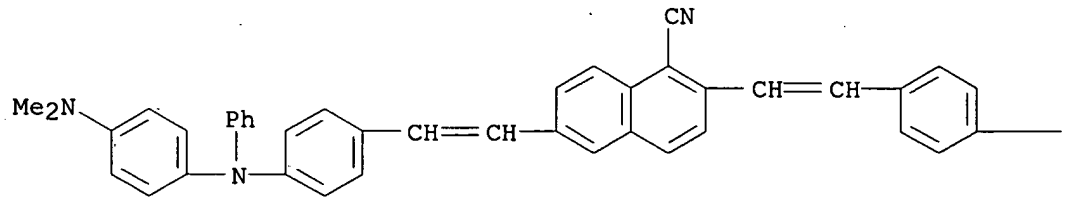

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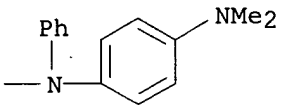


RN 333339-36-9 HCAPLUS
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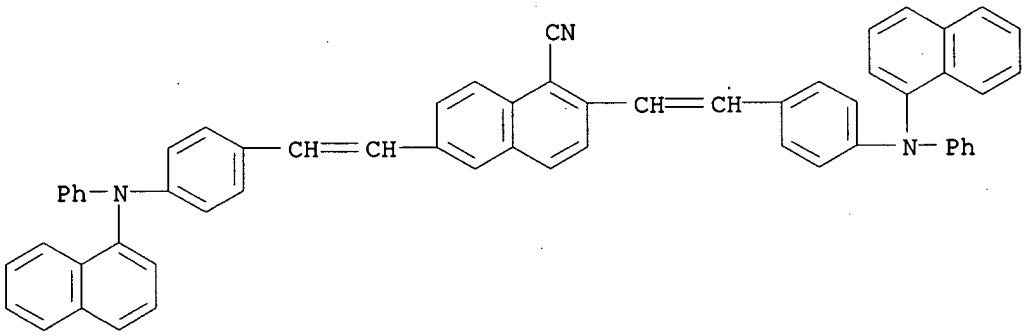


RN 333339-37-0 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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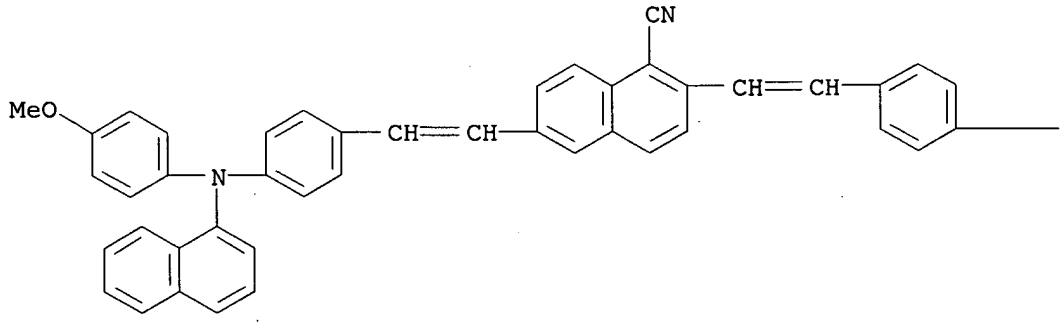

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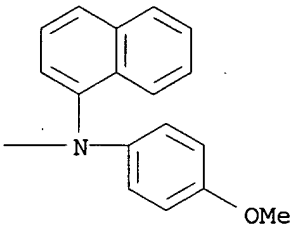


RN 333339-38-1 HCAPLUS
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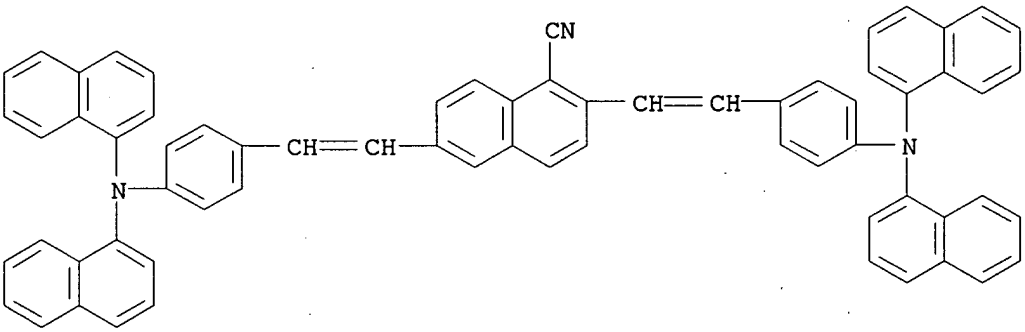


RN 333339-39-2 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-cyclohexylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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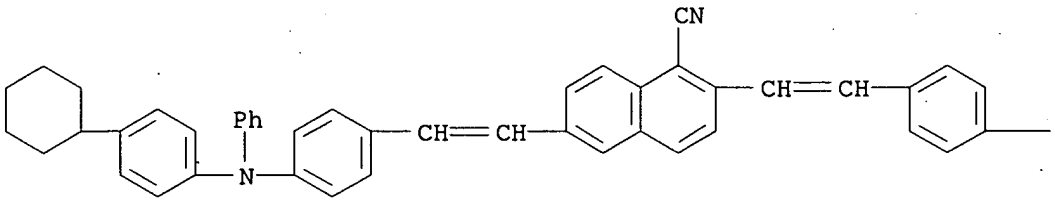


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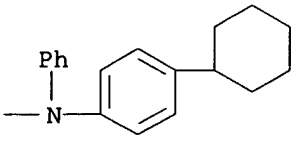


RN 333339-40-5 HCAPLUS

CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[[4-(cyclohexyloxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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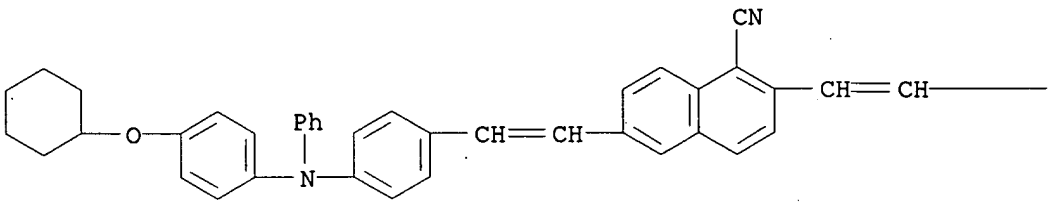
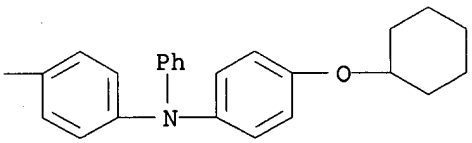
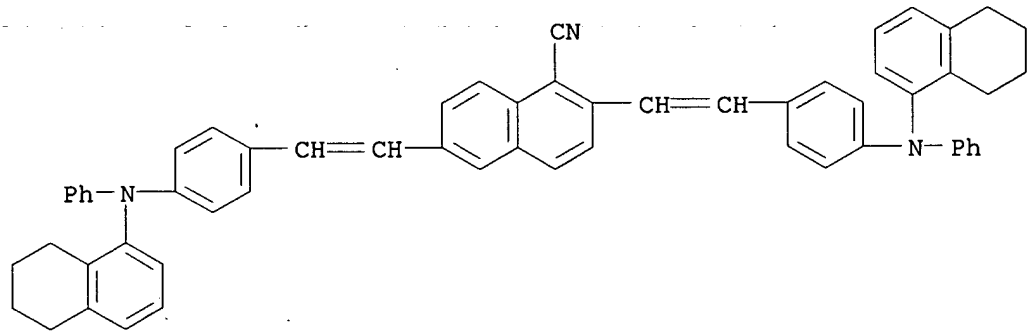



PAGE 1-B

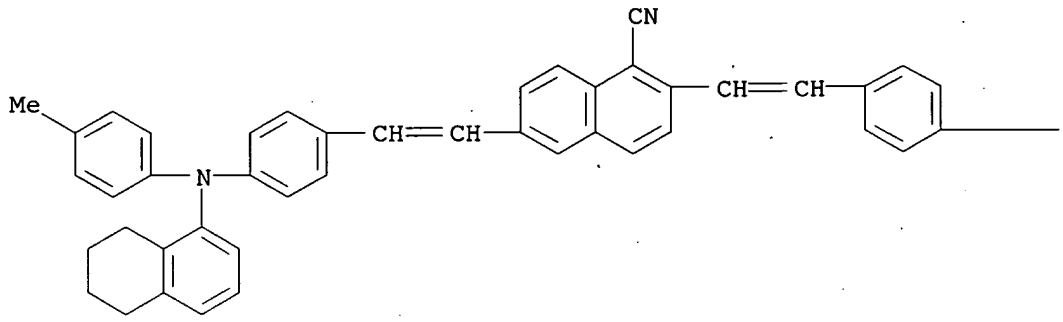



RN 333339-41-6 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

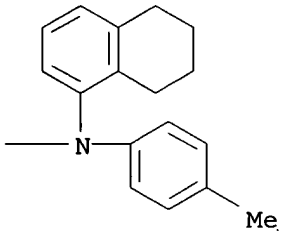



RN 333339-42-7 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A




PAGE 1-B

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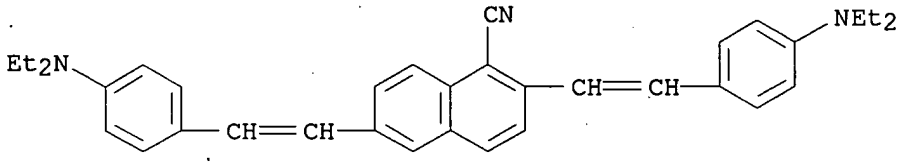
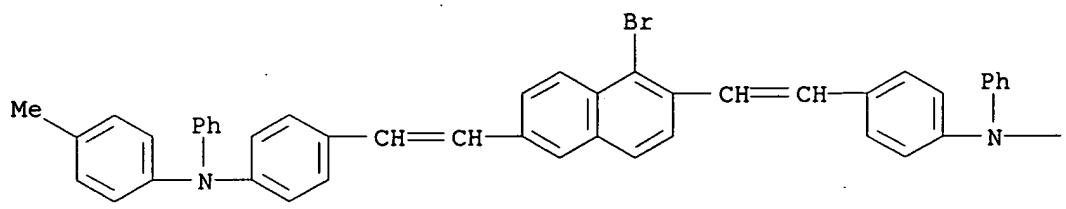



RN 333339-44-9 HCAPLUS
CN Benzenamine, 4,4'-[(1-bromo-2,6-naphthalenediyl)di-1,2-ethenediyl]bis[N-(4-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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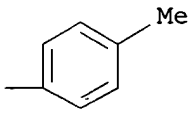
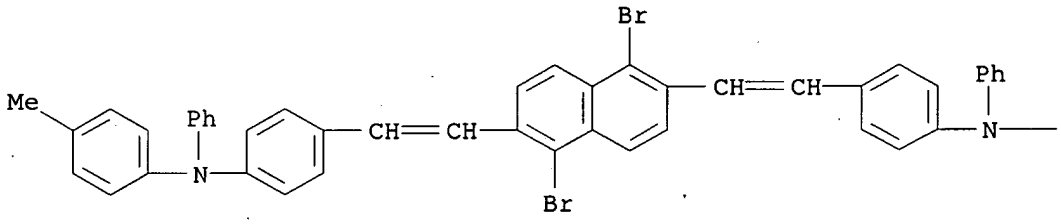



RN 333340-62-8 HCAPLUS
CN Benzenamine, 4,4'-[(1,5-dibromo-2,6-naphthalenediyl)di-1,2-ethenediyl]bis[N-(4-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

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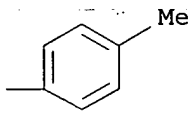
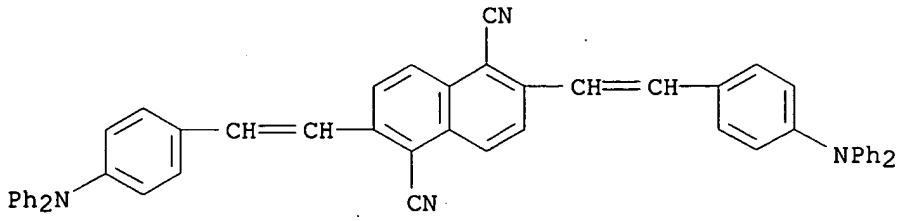
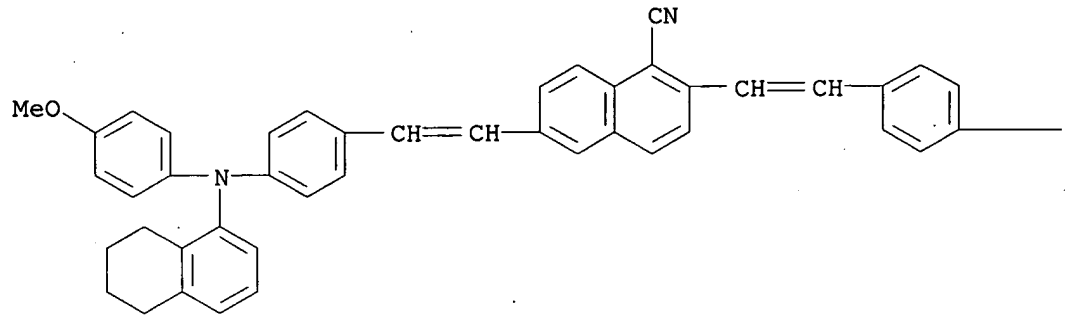



RN 333340-65-1 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 2,6-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

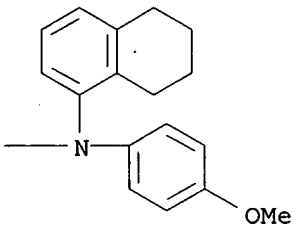



RN 333340-67-3 HCAPLUS
CN 1-Naphthalenecarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



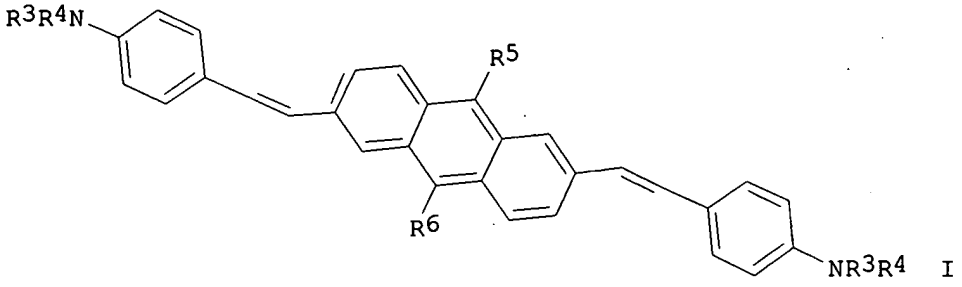

PAGE 1-B




L22 ANSWER 10 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:261095 HCAPLUS
DN 134:280615
TI Preparation of bis(aminostyryl)anthracenes as organic **luminescent** materials.
IN Ichimura, Mari; Ishibashi, Tadashi; Tamura, Shinichiro
PA Sony Corporation, Japan
SO Eur. Pat. Appl., 145 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C07C255-58
ICS C07C255-59; C07C255-52; C07F009-40; C07F009-54
CC 25-27 (Benzene, Its Derivatives, and Condensed Benzenoid Compounds)
Section cross-reference(s): 73, 74
FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 1090911 | A2 | 20010411 | EP 2000-121754 | 20001005 |
| | EP 1090911 | A3 | 20010808 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | JP 2001106657 | A2 | 20010417 | JP 1999-285254 | 19991006 |
| PRAI | JP 1999-285254 | A | 19991006 | | |

OS MARPAT 134:280615
GI




I

AB Title compds. e.g., (I; R2, R3 = unsubstituted aryl; R1, R4 = substituted aryl; R5, R6 = H, cyano, NO2, CF3, halo), were prepd. Thus, 9,10-dicyano-2,6-bis(diethylphosphonomethyl)anthracene (prepn. given) was stirred with NaH in THF/DMF; 4[-N-phenyl-N-(4-methoxyphenyl)amino]benzaldehyde in THF was added followed by 7 h stirring to give 14% I (R2, R3 = Ph; R1, R4 = 4-MeOC6H4; R5, R6 = cyano). This showed a fluorescence max. at 645 nm. Schematics of org. **electroluminescent** elements and a flat display are given.

ST aminostyrylanthracene prepn org **luminescent** material; display **electroluminescent** bisaminostyrylanthracene material; anthracene bisaminostyryl prepn org **luminescent** material

IT Phosphors
(**electroluminescent**; prepn. of bis(aminostyryl)anthracenes as org. **luminescent** materials)

IT **Electroluminescent** devices
(materials for **electroluminescent** displays; prepn. of bis(aminostyryl)anthracenes as org. **luminescent** materials)

IT 253868-51-8P **253868-96-1P 253869-00-0P**
**321709-36-8P 321709-39-1P 333426-57-6P**
333426-58-7P **333426-59-8P 333426-72-5P**
**333426-73-6P 333426-74-7P 333426-75-8P**
**333426-76-9P 333426-77-0P 333426-78-1P**
**333426-79-2P 333426-80-5P 333426-81-6P**
**333426-82-7P 333426-83-8P 333426-84-9P**
**333426-85-0P 333426-86-1P 333426-87-2P**
**333426-88-3P 333426-89-4P 333426-90-7P**
**333426-91-8P** 333426-92-9P 333426-93-0P 333426-94-1P
333426-95-2P 333426-97-4P 333426-99-6P 333427-01-3P 333427-03-5P
333427-05-7P 333427-08-0P 333427-10-4P 333427-12-6P
**333427-16-0P 333427-18-2P 333427-20-6P**
**333427-22-8P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of bis(aminostyryl)anthracenes as org. **luminescent** materials)

IT 613-26-3 4181-05-9 87755-82-6 89115-21-9 138249-95-3 333426-67-8
333426-68-9 333426-70-3 333426-71-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of bis(aminostyryl)anthracenes as org. **luminescent** materials)

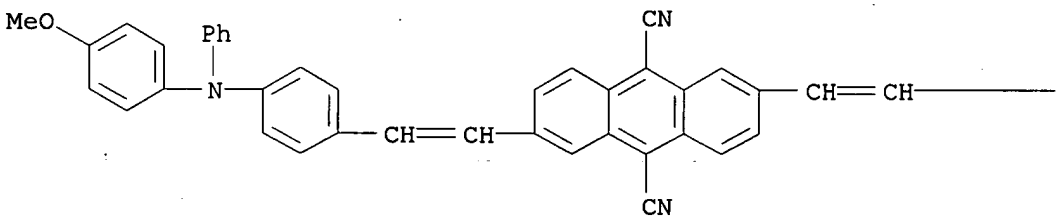
IT 138308-91-5P 333426-60-1P 333426-61-2P 333426-62-3P 333426-64-5P
333426-66-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT

(Reactant or reagent)
(prepn. of bis(aminostyryl)anthracenes as org. **luminescent** materials)

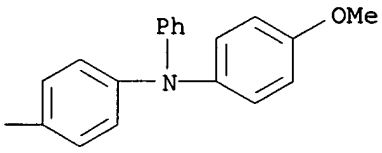
IT **253868-96-1P 253869-00-0P 321709-36-8P**
**321709-39-1P 333426-57-6P 333426-59-8P**
**333426-72-5P 333426-73-6P 333426-74-7P**
**333426-75-8P 333426-76-9P 333426-77-0P**
**333426-78-1P 333426-79-2P 333426-80-5P**
**333426-81-6P 333426-82-7P 333426-83-8P**
**333426-84-9P 333426-85-0P 333426-86-1P**
**333426-87-2P 333426-88-3P 333426-89-4P**
**333426-90-7P 333426-91-8P 333427-16-0P**
**333427-18-2P 333427-20-6P 333427-22-8P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. of bis(aminostyryl)anthracenes as org. **luminescent** materials)

RN 253868-96-1 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

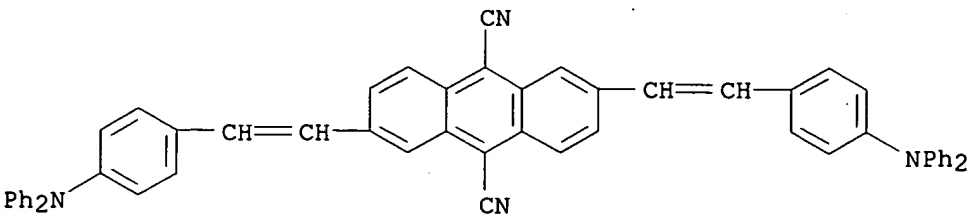
PAGE 1-A




PAGE 1-B

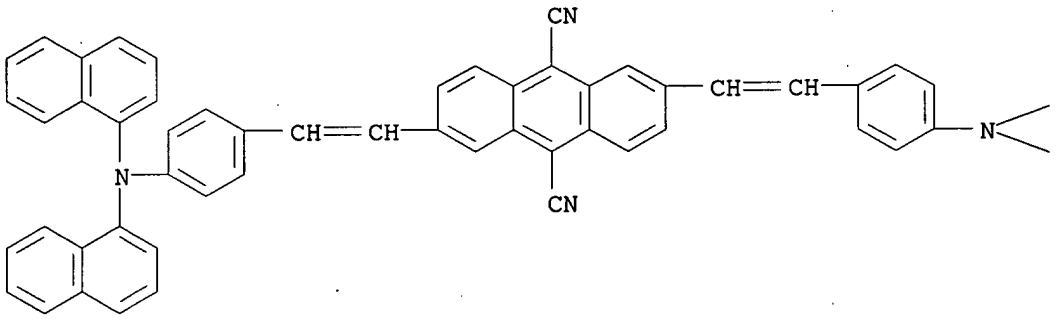



RN 253869-00-0 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 321709-36-8 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-(di-1-naphthalenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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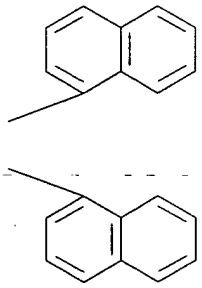
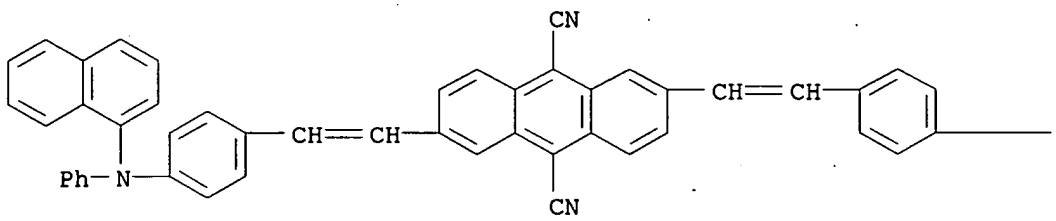


RN 321709-39-1 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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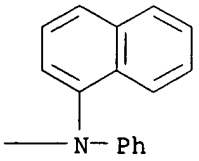
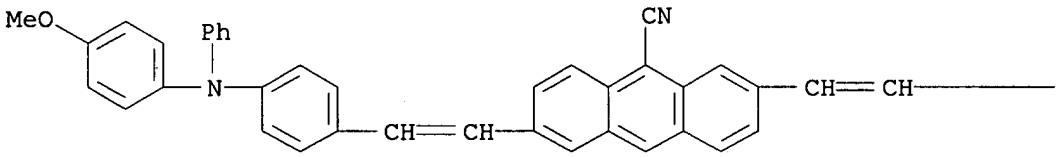



RN 333426-57-6 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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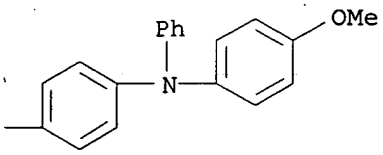
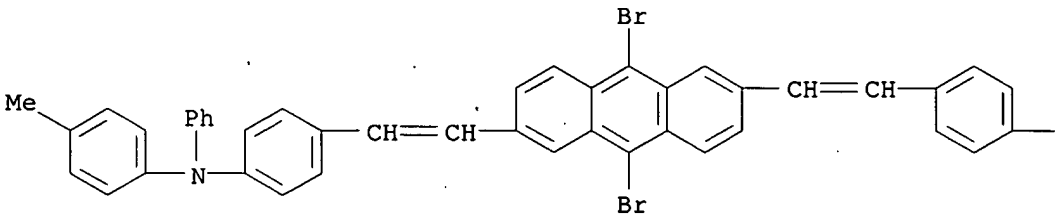



RN 333426-59-8 HCAPLUS
CN Benzenamine, 4,4'-[(9,10-dibromo-2,6-anthracenediyl)di-2,1-ethenediyl]bis[N-(4-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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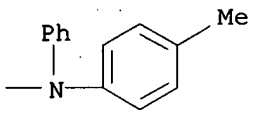
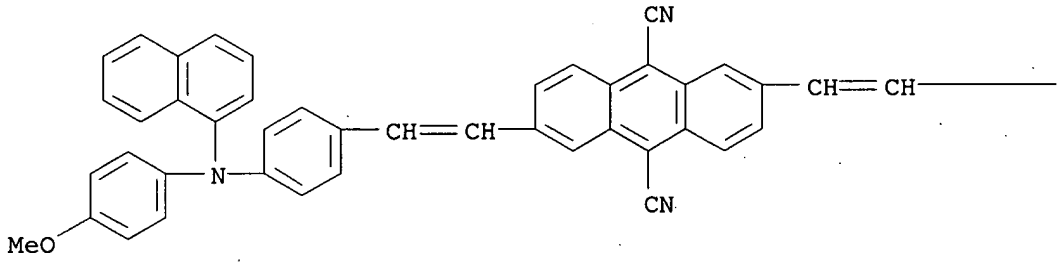



RN 333426-72-5 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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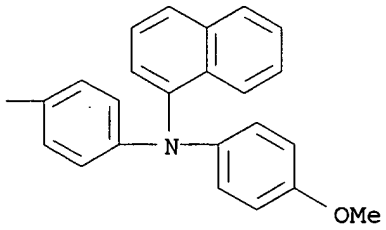
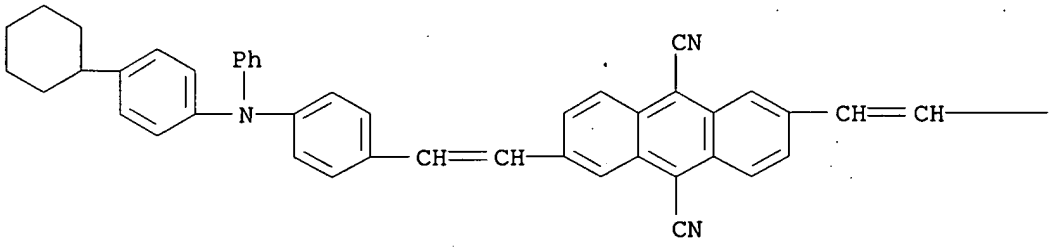



RN 333426-73-6 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[(4-cyclohexylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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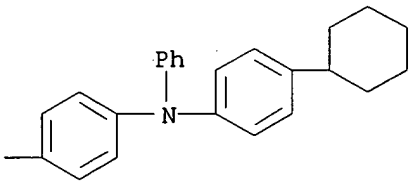
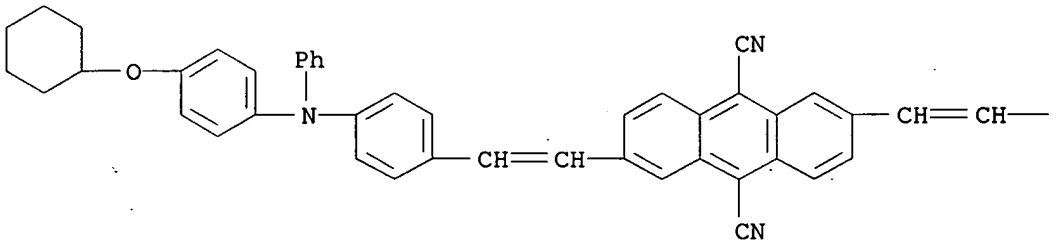



RN 333426-74-7 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[[4-(cyclohexyloxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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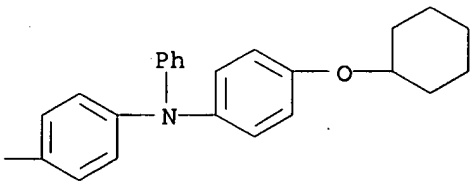
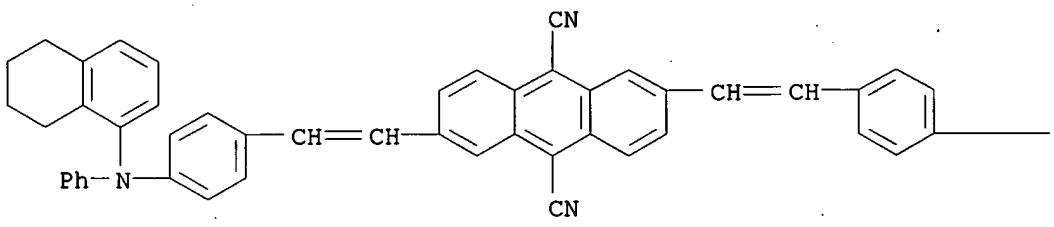



RN 333426-75-8 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-1-

naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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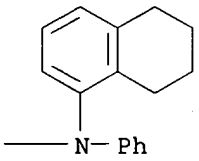
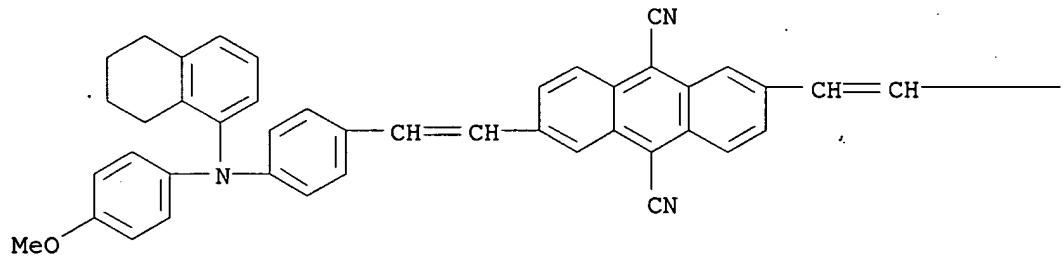
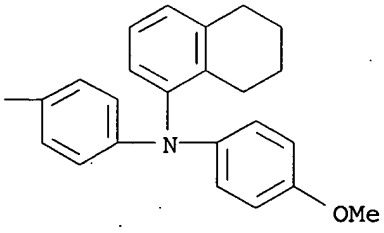



RN 333426-76-9 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



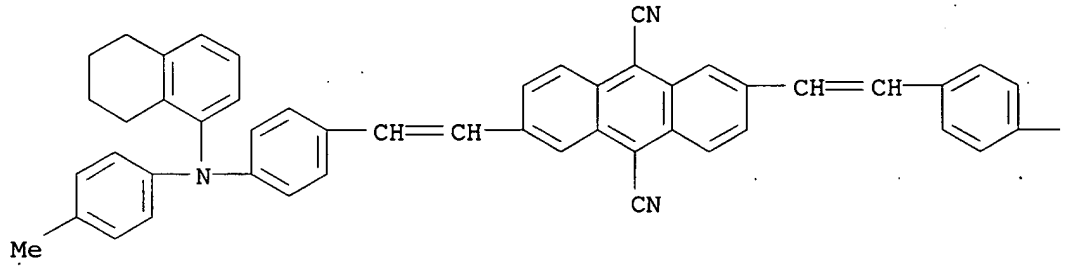

PAGE 1-B




RN 333426-77-0 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)(5,6,7,8-

tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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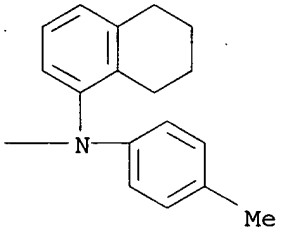
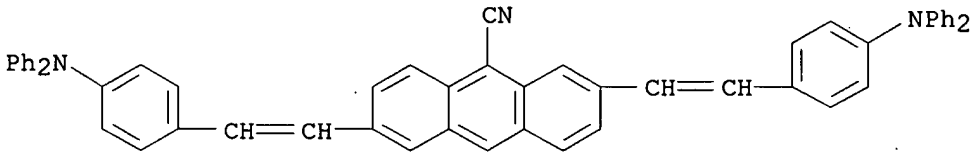
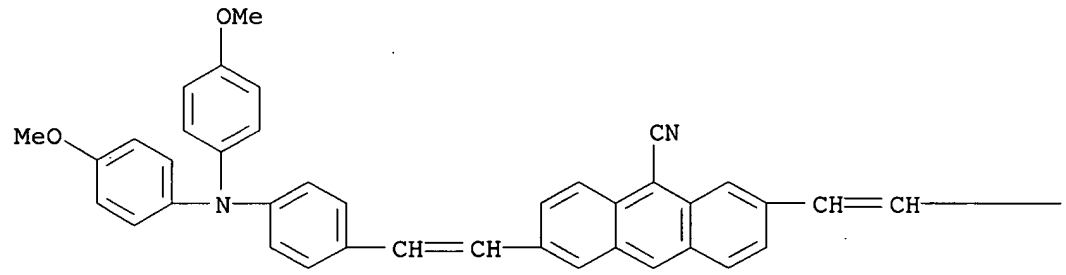



RN 333426-78-1 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

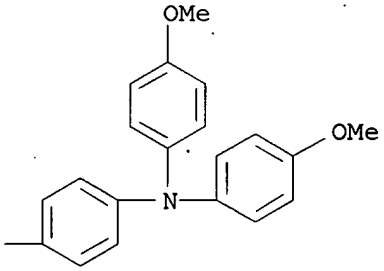



RN 333426-79-2 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

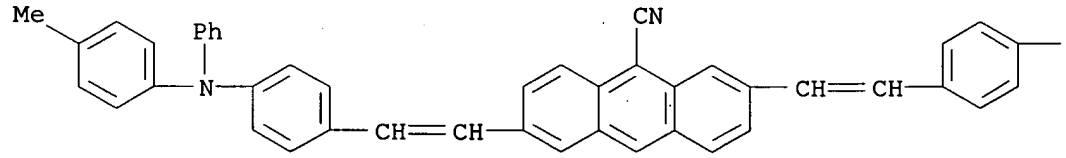



PAGE 1-B

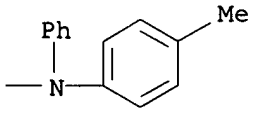



RN 333426-80-5 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)phenylamino]phenyl ]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

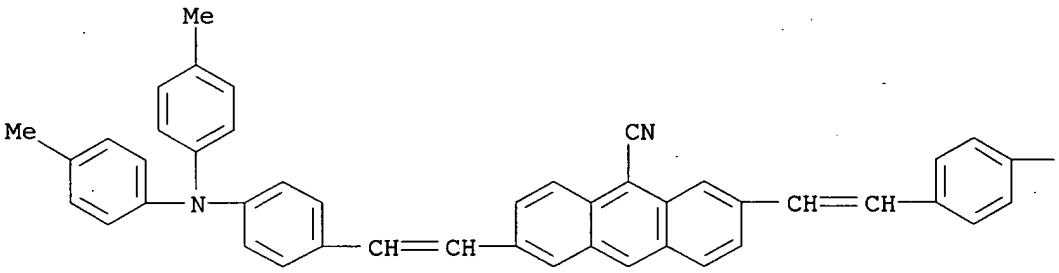



PAGE 1-B

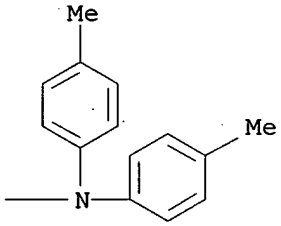



RN 333426-81-6 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

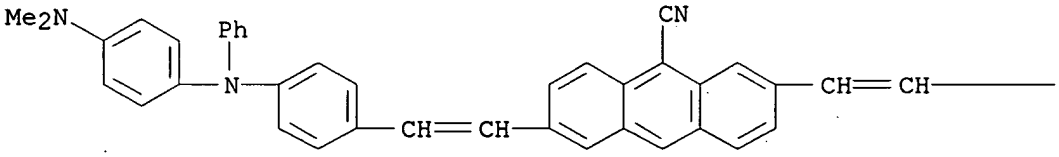



PAGE 1-B

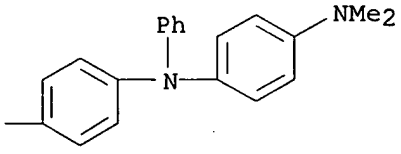



RN 333426-82-7 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[[4-(dimethylamino)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

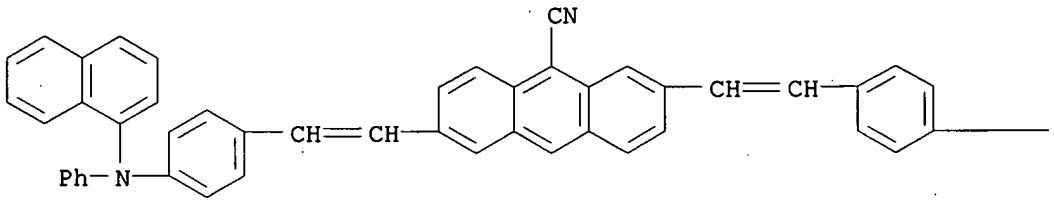



PAGE 1-B




RN 333426-83-8 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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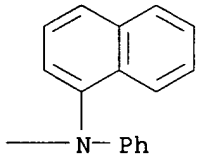
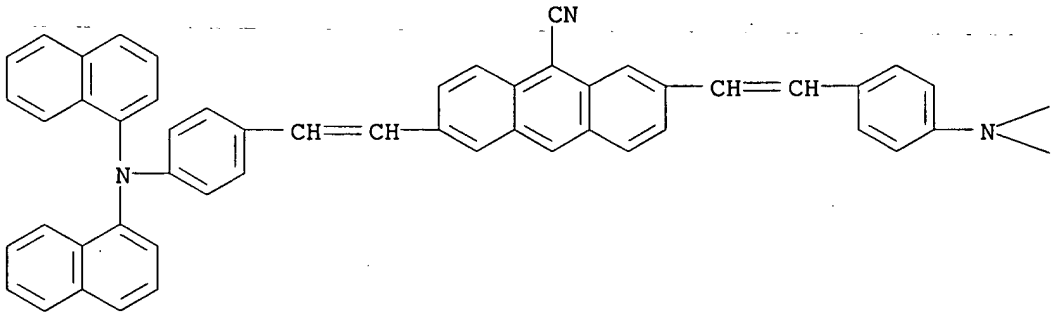
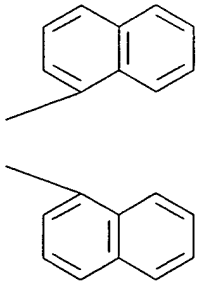



RN 333426-84-9 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-(di-1-naphthalenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



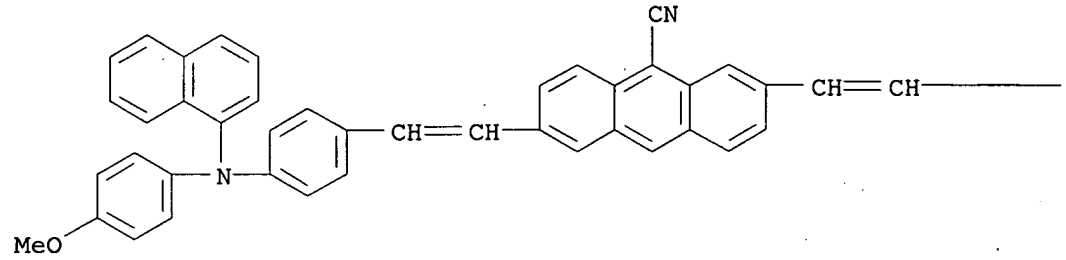

PAGE 1-B



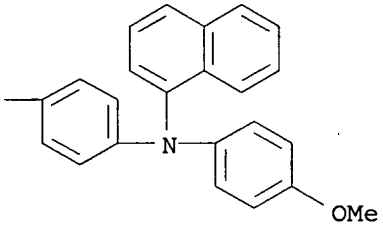
RN 333426-85-0 HCAPLUS

CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

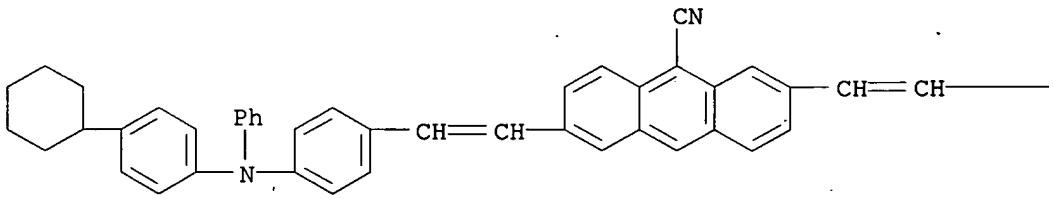



PAGE 1-B

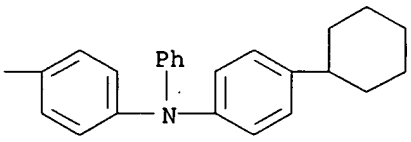



RN 333426-86-1 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[(4-cyclohexylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

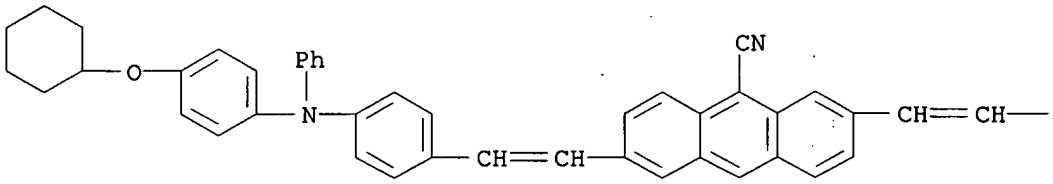



PAGE 1-B

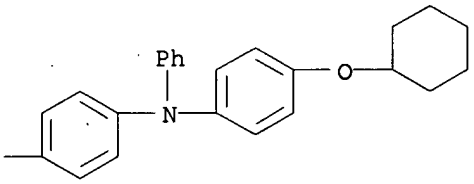



RN 333426-87-2 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[[4-(cyclohexyloxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

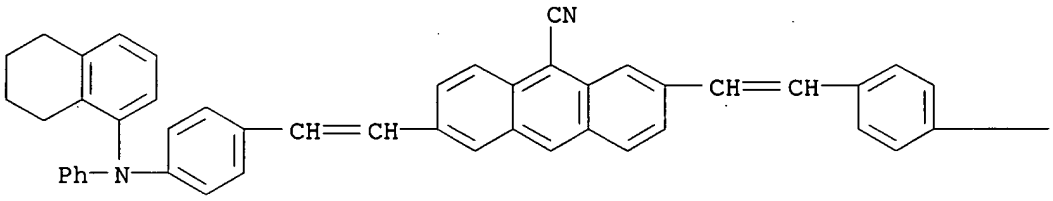


PAGE 1-B

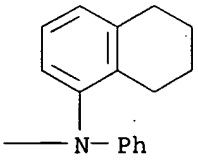


RN 333426-88-3 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RN 333426-89-4 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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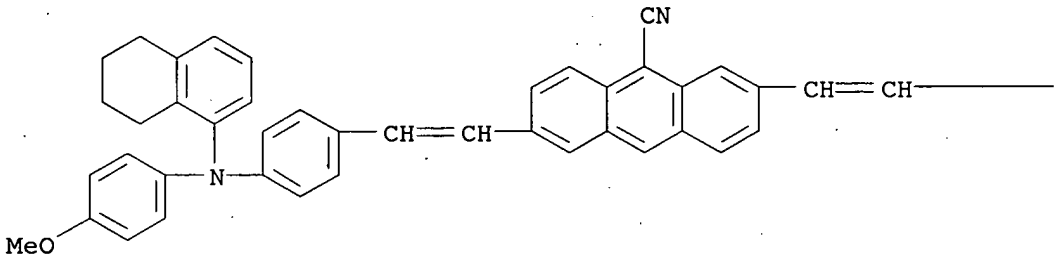


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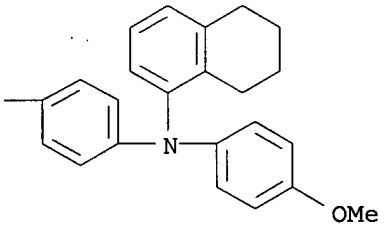


RN 333426-90-7 HCAPLUS
CN 9-Anthracenecarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

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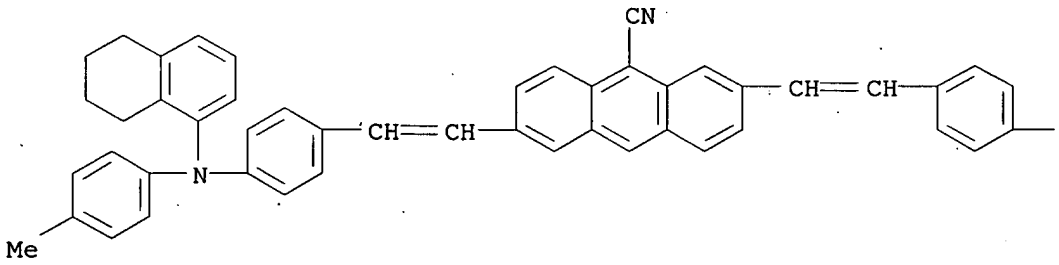


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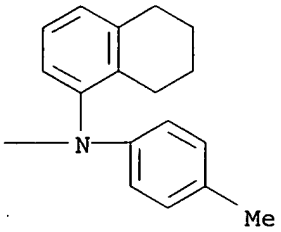
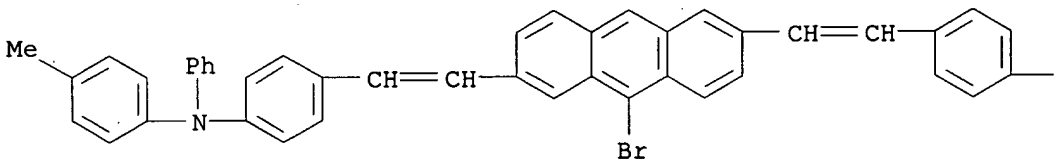


RN 333426-91-8 HCAPLUS
CN Benzenamine, 4,4'-[(9-bromo-2,6-anthracenediyl)di-2,1-ethenediyl]bis[N-(4-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

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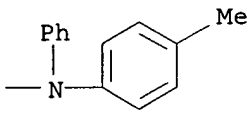
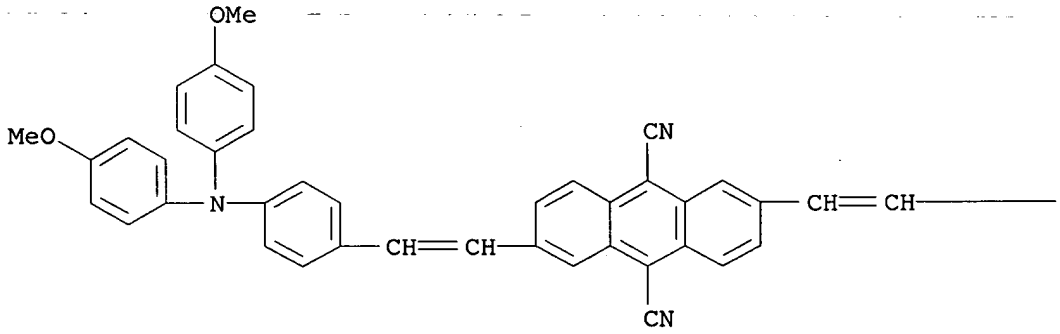



RN 333427-16-0 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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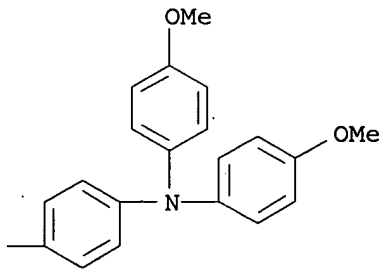
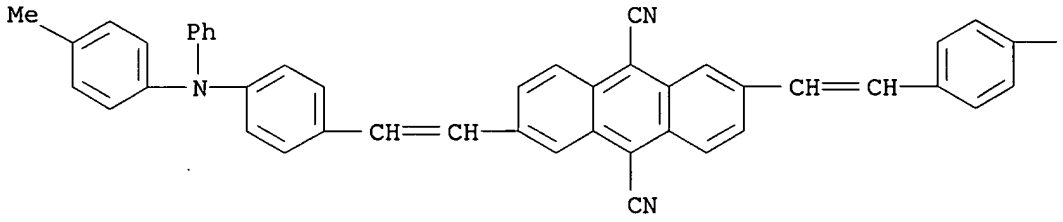


RN 333427-18-2 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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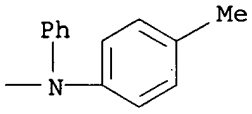
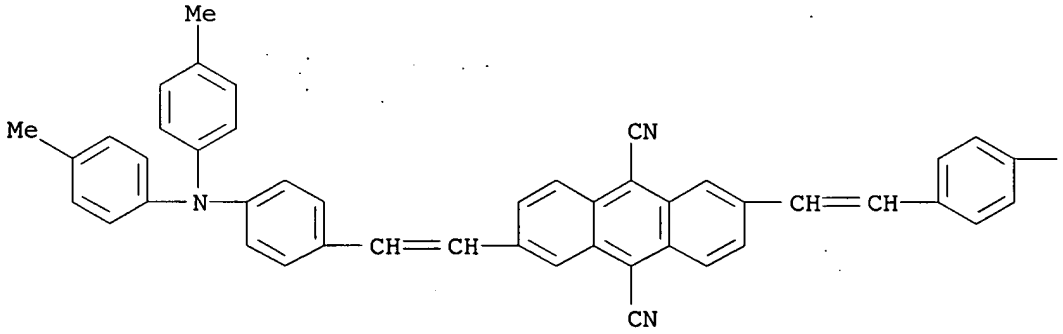



RN 333427-20-6 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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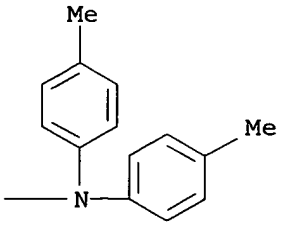
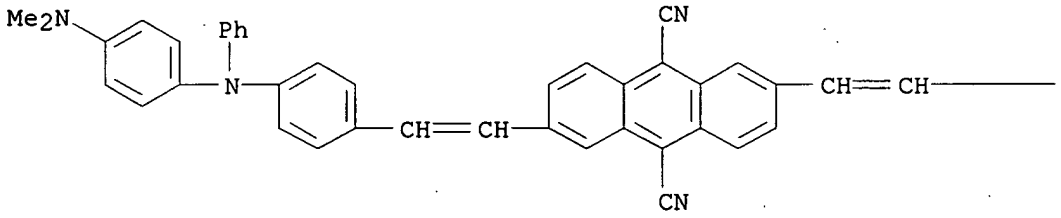


RN 333427-22-8 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[[4-(dimethylamino)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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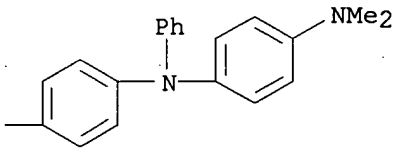


L22 ANSWER 11 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:184532 HCAPLUS
DN 135:68307
TI Synthesis and emission characteristics of novel red **electroluminescent** dye containing CN group
AU Kim, Dong Uk; Kim, Byung Moon
CS Department of Science Education, Taegu National University of Education, Taegu, 705-715, S. Korea
SO Bulletin of the Korean Chemical Society (2001), 22(2), 228-230
CODEN: BKCSDE; ISSN: 0253-2964
PB Korean Chemical Society
DT Journal
LA English
CC 73-12 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25, 76
AB A new org. **electroluminescent** dye, D-CN was synthesized and showed excellent **electroluminescent** efficiencies. Two kinds devices, a single-layer and double-layer, were fabricated for the emission characteristics of the org. material. Bright red luminance was obsd. in the both devices. The D-CN material had bipolar characteristics predicted from the mol. structure with 2 CN groups and 2 amine groups.
ST aminocyanostilbene dye LED red **electroluminescence**
IT **Luminescence, electroluminescence**
(spectra; synthesis and emission characteristics of novel red **electroluminescent** dye contg. CN group)
IT Current density
**Electroluminescent** devices
(synthesis and emission characteristics of novel red

**electroluminescent** dye contg. CN group)
IT 138372-67-5
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(electron transport layer; emission characteristics of novel red **electroluminescent** dye contg. CN group used in LED with)
IT 345908-02-3
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(emission characteristics of novel red **electroluminescent** dye contg. CN group used in LED)
IT **232948-26-4P**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(synthesis and emission characteristics of novel red **electroluminescent** dye contg. CN group)
IT 104-94-9, 4-Aminomethoxybenzene 591-50-4, Iodobenzene 622-75-3, 1,4-Benzenediacetonitrile
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis and emission characteristics of novel red **electroluminescent** dye contg. CN group)
IT 4316-51-2P, 4-Methoxytriphenylamine 87755-82-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis and emission characteristics of novel red **electroluminescent** dye contg. CN group)
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(2) Burroughes, J; Nature 1990, V347, P539 HCAPLUS
(3) Cho, H; Adv Mater 1997, V9, P326 HCAPLUS
(4) Do, L; J Appl Phys 1995, V76, P5118
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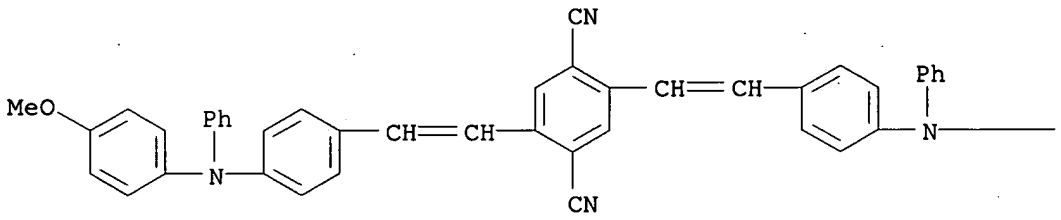
(10) Tang, C; J Appl Phys 1989, V65, P3610 HCAPLUS
(11) Tsutsui, T; Inorganic and Organic Electroluminescence 1996, P101 HCAPLUS
(12) Zyung, T; Chem Mater 1995, V7, P1499 HCAPLUS
IT **232948-26-4P**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(synthesis and emission characteristics of novel red **electroluminescent** dye contg. CN group)
RN 232948-26-4 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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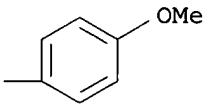



L22 ANSWER 12 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:111301 HCAPLUS
DN 134:170612
TI Preparation of julolidine-substituted styryl compounds useful as **electroluminescent** substances and their intermediates
IN Johnson, Karen A.
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 20 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C07D455-04
ICS C09K011-06; H05B033-14
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 27, 31
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2001039977 | A2 | 20010213 | JP 1999-216305 | 19990730 |
| PRAI | JP 1999-216305 | | 19990730 | | |

OS MARPAT 134:170612
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB The compds. I or II (X1, X2 = H, OH, alkoxy; R1-R8 = lower alkyl; R9, R10 = electron-withdrawing group), which emit **electroluminescence** from green to red and are useful for **electroluminescent** devices, are prepd. by treating formyljulolidines III (X = CHO; X3 = H, OH, alkoxy; R11-R14 = lower alkyl) or III (X = H; X3 = CHO; R11-R14 = lower alkyl) (IV) with diphosphonates V (R15, R16 = hydrocarbyl; R15 .noteq. R16; R17,

R18 = electron-withdrawing group; Y = halo) or diphosphonium VI. IV are prepd. by formylating III (X3 = R = H; R11-R14 = same as in IV) with adducts of DMF with phosphoryl halides or by treating aniline or m-RC6H4NH2 (R = hydrocarbyl, halo, alkoxy, etc.) with 1-halo-3,3-dialkyl-2-propenes, treating the resulting 3-[N,N-bis(3,3-dialkyl-2-propenyl)amine] salts with alkylsulfonic acids, neutralizing the resulting 1,1,7,7-tetraalkyljulolidine alkylsulfonates with alkalies, and then formulating the resulting 1,1,7,7-tetraalkyljulolidines. I (R1 = R2 = R3 = R4 = R5 = R6 = R7 = R8 = Me, X1 = X2 = OMe) (prepn. given) showed max. UV-visible absorption spectrum and max. fluorescence spectrum 508 and 600 nm, resp.

ST julolidine substituted styryl compd prepn **electroluminescent** device; formyljulolidine Wittig reaction xylylenediphosphonate

IT Wittig reaction
(Wittig-Horner reaction; prepn. of julolidine-substituted styryl compds. useful as **electroluminescent** substances by Wittig reaction of formyljulolidines)

IT Phosphors
(**electroluminescent**; prepn. of julolidine-substituted styryl compds. useful as **electroluminescent** substances by Wittig reaction of formyljulolidines)

IT **Electroluminescent** devices
Wittig reaction
(prepn. of julolidine-substituted styryl compds. useful as **electroluminescent** substances by Wittig reaction of formyljulolidines)

IT **322475-09-2P 322475-14-9P 322475-17-2P**
**322475-22-9P 322475-23-0P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of julolidine-substituted styryl compds. useful as **electroluminescent** substances by Wittig reaction of formyljulolidines)

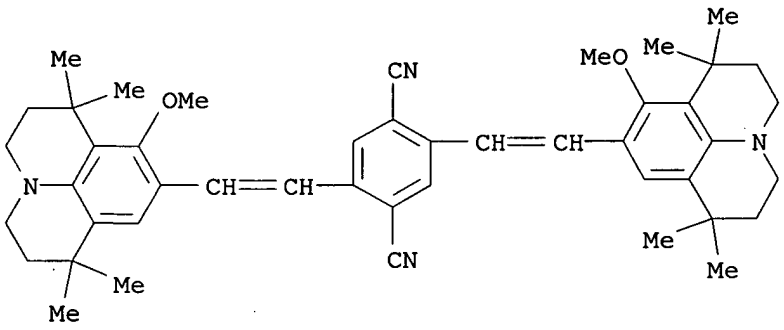
IT 62-53-3, Aniline, reactions 122-52-1, Triethyl phosphite 503-60-6 603-35-0, Triphenylphosphine, reactions 39095-25-5, 2,5-Dimethylterephthalonitrile 115662-09-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of julolidine-substituted styryl compds. useful as **electroluminescent** substances by Wittig reaction of formyljulolidines)

IT 64746-04-9P 216978-79-9P 232948-23-1P 322475-18-3P 322475-19-4P 322475-20-7P 322475-21-8P 325722-27-8P 325722-28-9P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. of julolidine-substituted styryl compds. useful as **electroluminescent** substances by Wittig reaction of formyljulolidines)

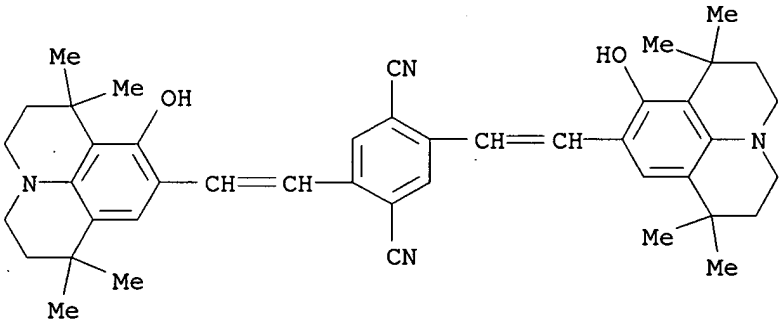
IT **322475-09-2P 322475-14-9P 322475-17-2P**
**322475-22-9P 322475-23-0P**
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)
(prepn. of julolidine-substituted styryl compds. useful as **electroluminescent** substances by Wittig reaction of formyljulolidines)

RN 322475-09-2 HCAPLUS

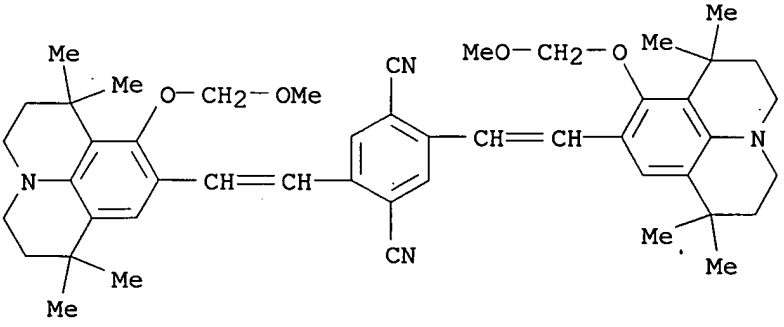
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-8-methoxy-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)



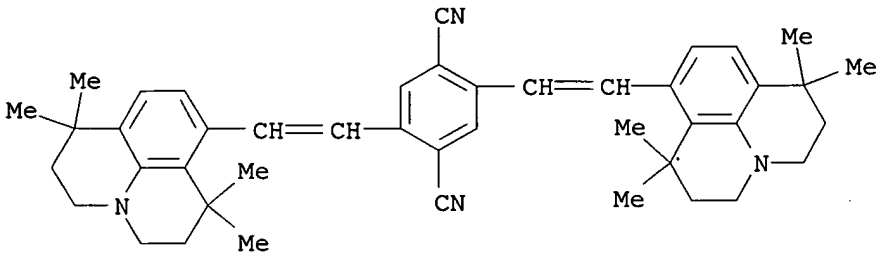
RN 322475-14-9 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-8-hydroxy-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)



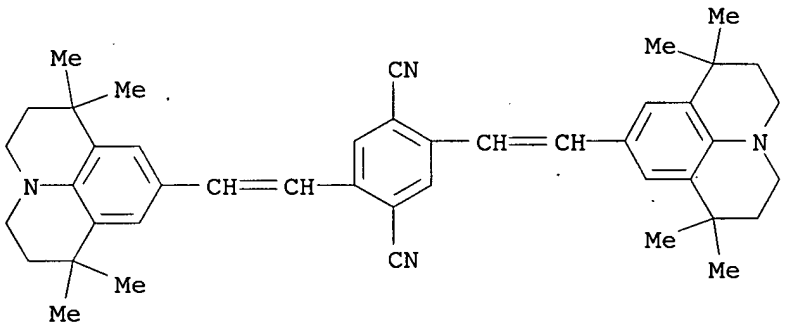
RN 322475-17-2 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[2,3,6,7-tetrahydro-8-(methoxymethoxy)-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl]ethenyl]- (9CI) (CA INDEX NAME)



RN 322475-22-9 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-8-yl)ethenyl]- (9CI) (CA INDEX NAME)



RN 322475-23-0 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)



L22 ANSWER 13 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:78139 HCAPLUS
DN 134:155053
TI Organic **electroluminescent** device
IN Ishibashi, Tadashi; Ichimura, Mari; Tamura, Shinichiro
PA Sony Corp., Japan
SO Eur. Pat. Appl., 47 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM H01L051-20
ICS C09K011-06
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 28, 76
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | EP 1073128 | A2 | 20010131 | EP 2000-402174 | 20000728 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | JP 2001043974 | A2 | 20010216 | JP 1999-216307 | 19990730 |
| | TW 468361 | B | 20011211 | TW 2000-89113131 | 20000703 |
| | US 6479171 | B1 | 20021112 | US 2000-624769 | 20000725 |
| | CN 1283074 | A | 20010207 | CN 2000-122138 | 20000731 |
| PRAI | JP 1999-216307 | A | 19990730 | | |

OS MARPAT 134:155053
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Org. **electroluminescent** devices comprising an org. layer having a **luminescent** region sandwiched between an anode and a cathode are described in which the org. layer comprises a julolidyl-substituted styryl compd. represented by general formulas I or II (X1 and X2 = independently selected H, hydroxyl group, or (un)satd. (un)substituted alkoxyl, alkyl, amino, alkylamino, or (un)substituted aryl; R1-8 = independently selected lower alkyls; and R9-12 = independently selected groups including .gtoreq.1 electron attracting group).

ST org **electroluminescent** device julolidyl substituted styryl compd

IT **Electroluminescent** devices
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)

IT 2085-33-8, Tris(8-hydroxyquinolinato)aluminum 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 65181-78-4, N,N'-Diphenyl-N,N'-bis(3-methylphenyl)-1,1'-biphenyl-4,4'-diamine 123847-85-8, .alpha.-NPD **322475-10-5 322475-11-6 322475-12-7 322475-13-8 322475-15-0**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)

IT **322475-17-2P**
RL: DEV (Device component use); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)

IT **322475-09-2P 322475-14-9P**
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)

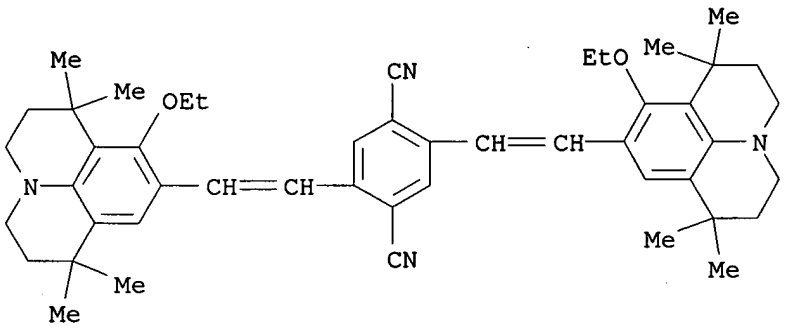
IT **322475-22-9P 322475-23-0P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)

IT 322475-19-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)

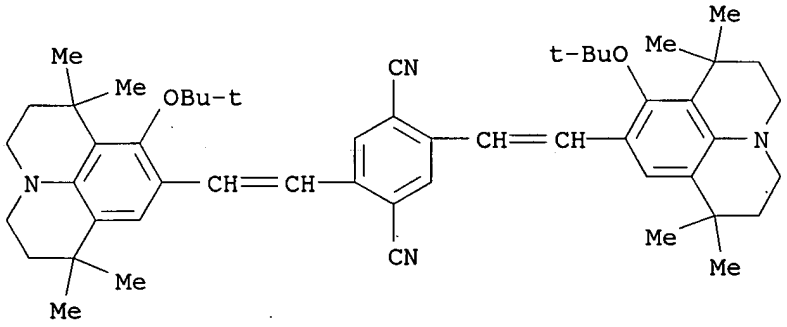
IT 216978-79-9P 322475-18-3P 322475-20-7P 322475-21-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)

IT **322475-10-5 322475-11-6 322475-12-7 322475-13-8 322475-15-0**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)

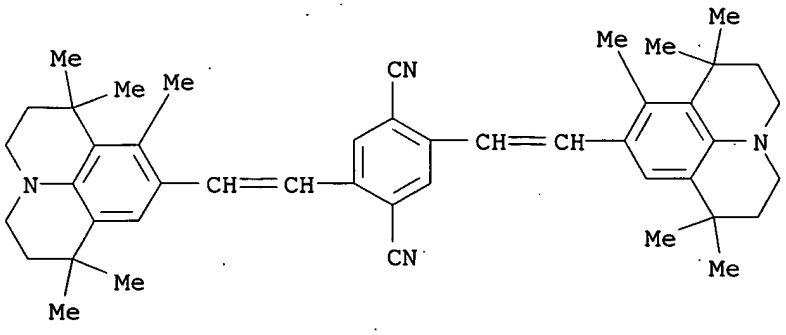
RN 322475-10-5 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(8-ethoxy-2,3,6,7-tetrahydro-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)



RN 322475-11-6 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[8-(1,1-dimethylethoxy)-2,3,6,7-tetrahydro-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl]ethenyl]- (9CI) (CA INDEX NAME)

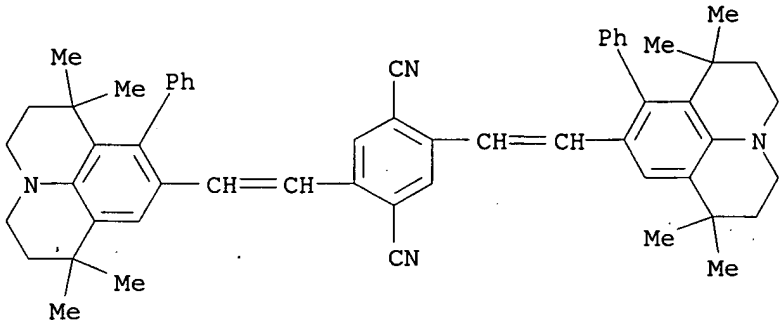


RN 322475-12-7 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-1,1,7,7,8-pentamethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)

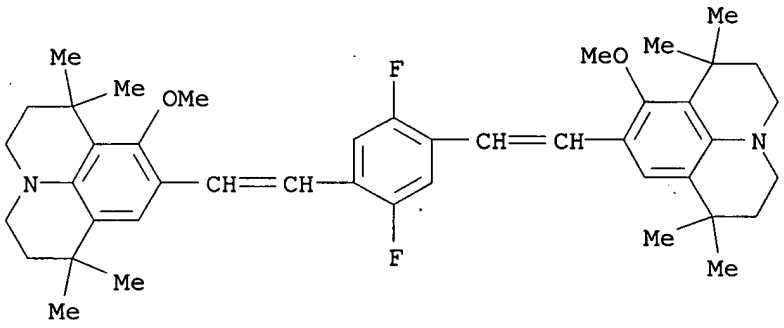


RN 322475-13-8 HCAPLUS

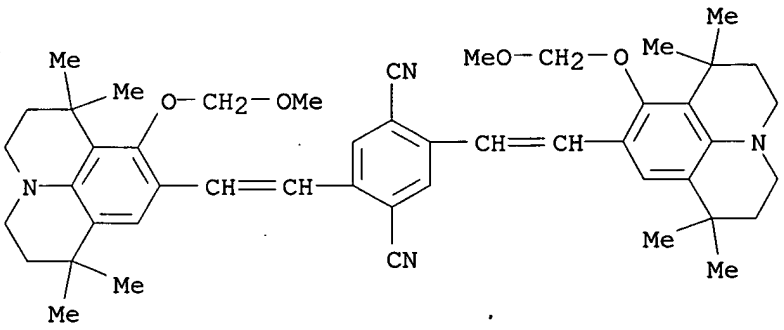
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-1,1,7,7-tetramethyl-8-phenyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)



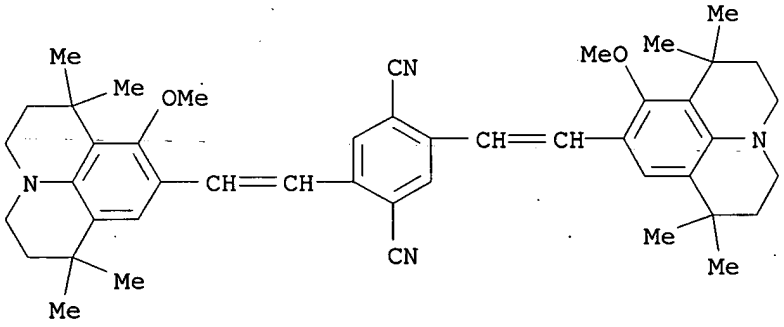
RN 322475-15-0 HCAPLUS
CN 1H,5H-Benzo[ij]quinolizine, 9,9'-[(2,5-difluoro-1,4-phenylene)di-2,1-ethenediyl]bis[2,3,6,7-tetrahydro-8-methoxy-1,1,7,7-tetramethyl- (9CI) (CA INDEX NAME)



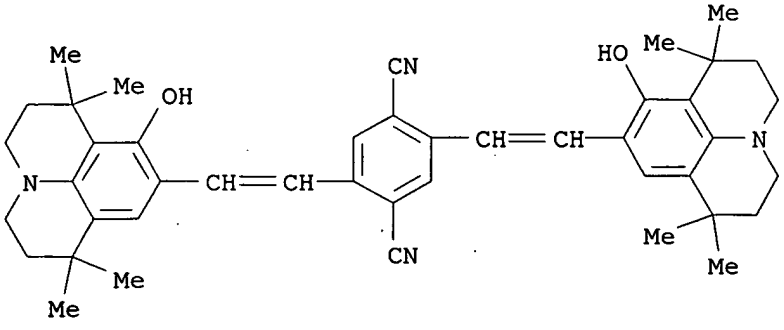
IT **322475-17-2P**
RL: DEV (Device component use); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)
RN 322475-17-2 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[2,3,6,7-tetrahydro-8-(methoxymethoxy)-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl]ethenyl]- (9CI) (CA INDEX NAME)



IT **322475-09-2P 322475-14-9P**
RL: DEV (Device component use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)
RN 322475-09-2 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-8-methoxy-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)



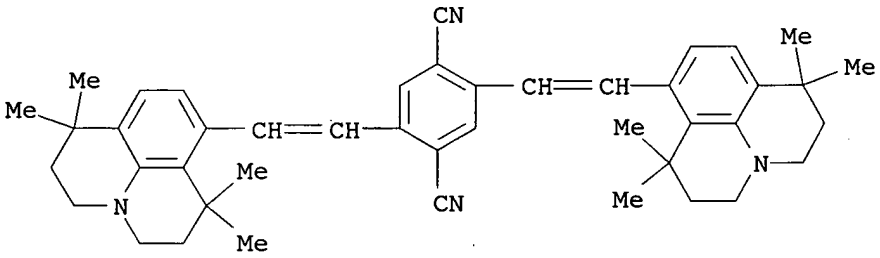
RN 322475-14-9 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-8-hydroxy-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)



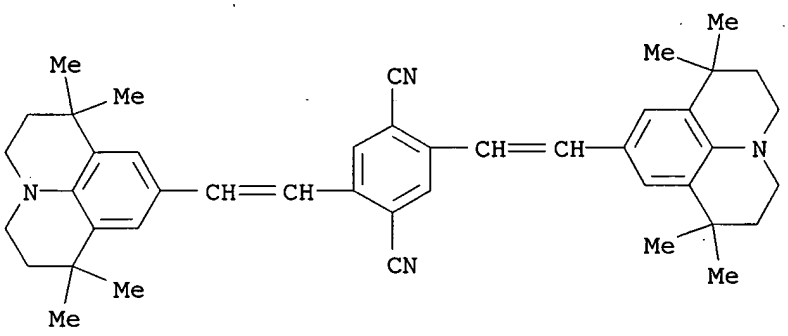
IT **322475-22-9P 322475-23-0P**

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(org. **electroluminescent** devices using julolidyl-substituted styryl compds.)

RN 322475-22-9 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-8-yl)ethenyl]- (9CI) (CA INDEX NAME)



RN 322475-23-0 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-(2,3,6,7-tetrahydro-1,1,7,7-tetramethyl-1H,5H-benzo[ij]quinolizin-9-yl)ethenyl]- (9CI) (CA INDEX NAME)



L22 ANSWER 14 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2001:78059 HCAPLUS
DN 134:139023
TI Organic **electroluminescent** device
IN Ishibashi, Tadashi; Ichimura, Mari; Tamura, Shinichiro
PA Sony Corp., Japan
SO Eur. Pat. Appl., 31 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C09K011-06
ICS H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 76
FAN.CNT 1
PATENT NO. KIND DATE APPLICATION NO. DATE

| | | | | | |
|---|---|---|---|---|---|
| PI | EP 1072668 | A2 | 20010131 | EP 2000-402171 | 20000728 |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | TW 463520 | B | 20011111 | TW 2000-89113986 | 20000713 |
| | US 6495274 | B1 | 20021217 | US 2000-624146 | 20000721 |
| | JP 2001110571 | A2 | 20010420 | JP 2000-229659 | 20000728 |
| | CN 1283072 | A | 20010207 | CN 2000-121795 | 20000731 |
| PRAI | JP 1999-216308 | A | 19990730 | | |

OS MARPAT 134:139023

AB Org. **electroluminescent** devices comprising an org. layer, which contains at least one distyryl compd. R1R2N-p-C6H4-CH:CHXCH:CH-p-C6H4-NR3R4 [R1,4 = H, or (un)substituted aryl or naphthyl; X = cyano, nitro or halo substituted anthracene].

ST org **electroluminescent** device distyryl compd

IT **Electroluminescent** devices
(org. **electroluminescent** device)

IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 65181-78-4, TPD 123847-85-8, .alpha.-NPD **321709-38-0 321709-39-1 321709-41-5 321709-42-6 321709-44-8**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** device)

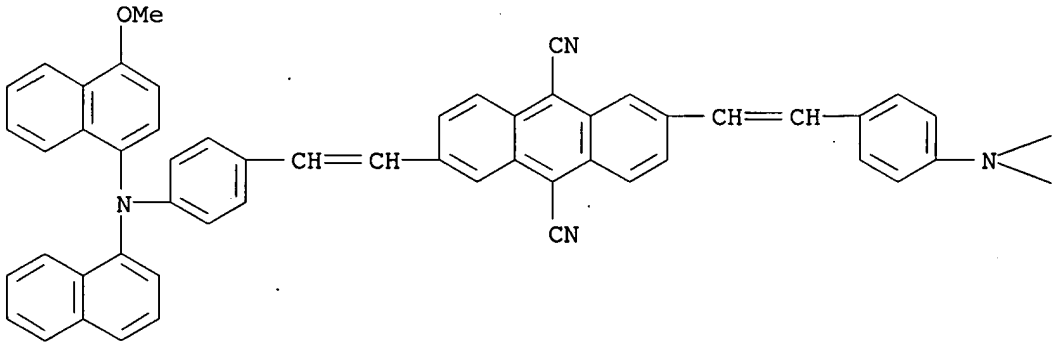
IT **321709-36-8**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** devices employing distyryl compds.)

IT **321709-38-0 321709-39-1 321709-41-5 321709-42-6 321709-44-8**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** device)

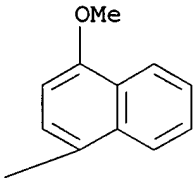
RN 321709-38-0 HCAPLUS

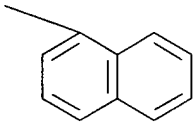
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxy-1-naphthalenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



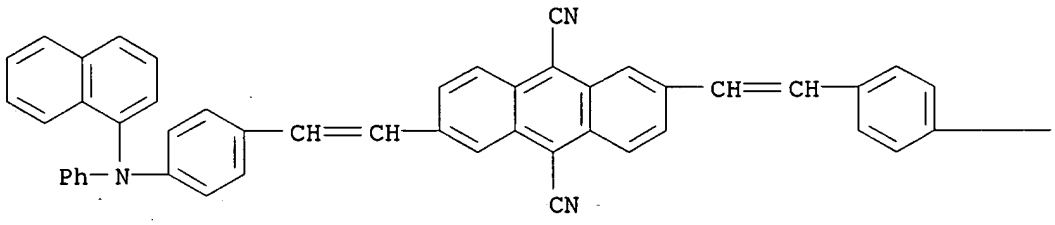
PAGE 1-B



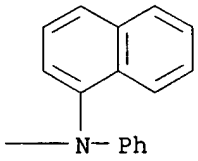



RN 321709-39-1 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

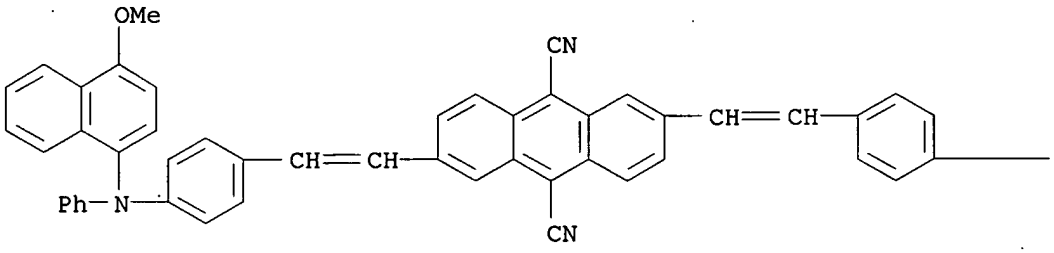



PAGE 1-B

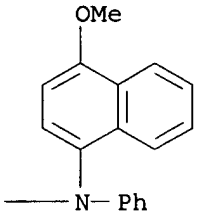



RN 321709-41-5 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxy-1-naphthalenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

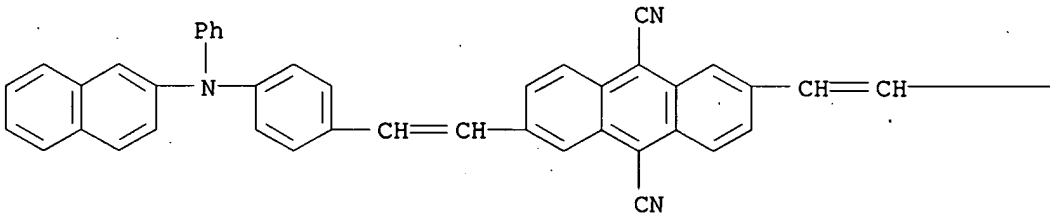



PAGE 1-B

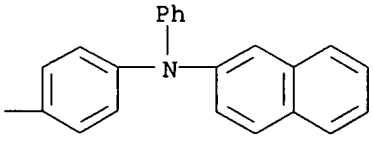



RN 321709-42-6 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-(2-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

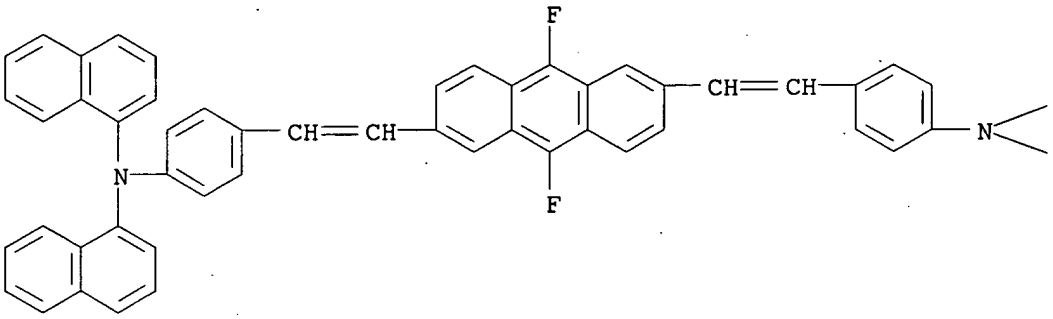



PAGE 1-B

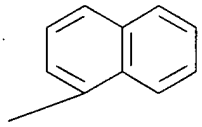


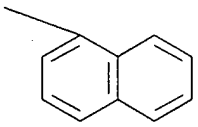

RN 321709-44-8 HCAPLUS
CN 1-Naphthalenamine, N,N'-[(9,10-difluoro-2,6-anthracenediyl)bis(2,1-ethenediyl-4,1-phenylene)]bis[N-1-naphthalenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



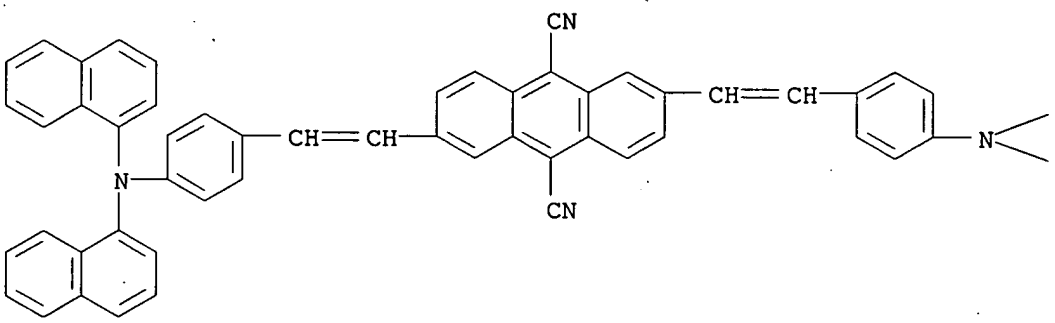

PAGE 1-B



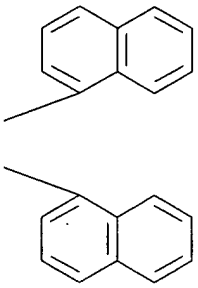


IT **321709-36-8**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** devices employing distyryl compds.)
RN 321709-36-8 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-(di-1-naphthalenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L22 ANSWER 15 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:638389 HCAPLUS
DN 133:230164
TI Production method of **electroluminescent** device
IN Onishima, Yasunori; Tamura, Shinichiro; Asai, Nobutoshi
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-10
ICS C23C014-12; H05B033-14
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 1

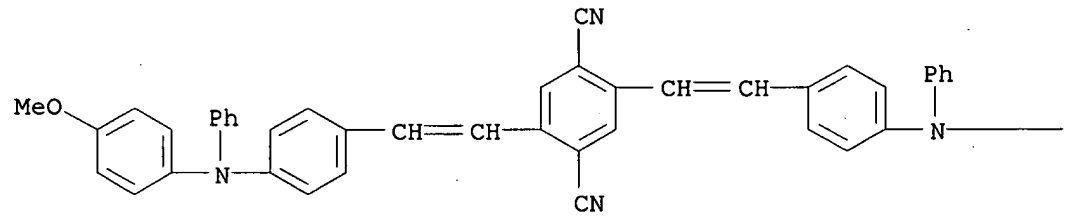
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2000252061 | A2 | 20000914 | JP 1999-55292 | 19990303 |
| PRAI JP 1999-55292 | | 19990303 | | |

AB The invention refers to a prodn. method of **electroluminescent** devices wherein a pellets of **luminescent** material are used to construct the **electroluminescent** layer so that the device may be produced quickly under vacuum, and without impurities.

ST **electroluminescent** device
IT **Luminescent** substances
(**electroluminescent**; prodn. method of **electroluminescent** device)
IT **Electroluminescent** devices
(prodn. method of **electroluminescent** device)
IT 2085-33-8, Aluminum tris(8-hydroxyquinolinato) 50926-11-9, ITO 124729-98-2 **232948-26-4**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(prodn. method of **electroluminescent** device)
IT 123847-85-8, .alpha.-NPD
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(.alpha.-NPD; prodn. method of **electroluminescent** device)
IT **232948-26-4**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(prodn. method of **electroluminescent** device)

RN 232948-26-4 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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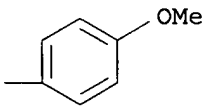
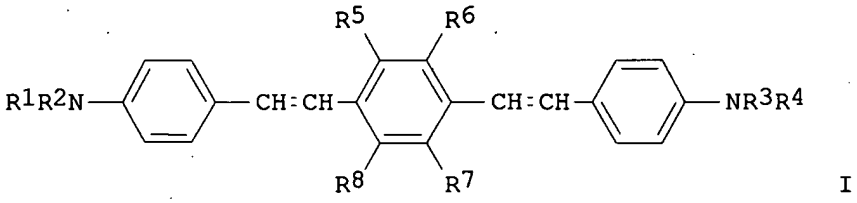



L22 ANSWER 16 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:585508 HCAPLUS
DN 133:185625
TI **Electroluminescent** bis(aminostyryl)benzene compounds, their synthetic intermediates, and manufacture of the compounds
IN Ichimura, Mari; Tamura, Shinichiro; Ishibashi, Tadashi; Takada, Kazunori
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 148 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C09B023-00
ICS C09B023-00; C07C211-56; C07C217-92; C07C223-06; C07C253-30; C07C255-51; C07F009-40; C07F009-54; C09K011-06; H05B033-14
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41
FAN.CNT 2

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2000230132 | A2 | 20000822 | JP 1999-312069 | 19991102 |
| | US 6337167 | B1 | 20020108 | US 1999-455724 | 19991206 |
| | US 6525212 | B1 | 20030225 | US 2000-704960 | 20001102 |
| | US 2003060652 | A1 | 20030327 | US 2002-228019 | 20020826 |
| | US 2003069437 | A1 | 20030410 | US 2002-227671 | 20020826 |
| | US 2003073863 | A1 | 20030417 | US 2002-227711 | 20020826 |
| PRAI | JP 1998-347561 | A | 19981207 | | |
| | JP 1999-312069 | A | 19991102 | | |
| | US 1999-455724 | A2 | 19991206 | | |
| | US 2000-704960 | A3 | 20001102 | | |

OS MARPAT 133:185625

GI



I

AB The bis(aminostyryl)benzenes are those represented as I (R1-R4 = aryls; R5-R8 involves cyano, NO2, halogen; other Markush structures corresponding to the compds. are also claimed). The compds. are manufd. by Wittig-Horner reaction or Wittig reaction of the claimed intermediates and the intermediates may be manufd. by coupling reaction. The compds. showing yellow to red color **electroluminescence** are suitable for display device.

ST yellow red **electroluminescence** bisaminostyrylbenzene manuf; **electroluminescent** device bisaminostyrylbenzene; Wittg Horner reaction bisaminostyrylbenzene

IT Wittig reaction
(Wittig-Horner reaction; for manuf. of bis(aminostyryl)benzenes showing yellow to red **electroluminescence** for display device)

IT Coupling reaction
Wittig reaction
(for manuf. of bis(aminostyryl)benzenes showing yellow to red **electroluminescence** for display device)

IT **Electroluminescent** devices
(manuf. of bis(aminostyryl)benzenes showing yellow to red **electroluminescence** for display device)

IT 62-53-3, Benzenamine, reactions 603-35-0, Triphenylphosphine, reactions 288627-04-3
RL: RCT (Reactant); RACT (Reactant or reagent)
(for manuf. of bis(aminostyryl)benzenes showing yellow to red **electroluminescence** for display device)

IT 4316-52-3P 4316-53-4P 20440-94-2P 20440-95-3P 42906-19-4P 89115-20-8P 89115-21-9P
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(intermediate; manuf. of bis(aminostyryl)benzenes showing yellow to red **electroluminescence** for display device)

IT 603-34-9 4181-05-9 4316-50-1 4316-51-2 36809-23-1 61231-45-6 87755-82-6 131660-61-2 138310-87-9 178477-23-1 288626-94-8 288626-95-9 288626-96-0 288626-97-1 288626-98-2 288626-99-3 288627-00-9 288627-01-0 288627-02-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(intermediate; manuf. of bis(aminostyryl)benzenes showing yellow to red **electroluminescence** for display device)

IT **251101-60-7P 251349-04-9P 253868-17-6P 253868-91-6P 288626-78-8P 288626-79-9P 288626-80-2P 288626-81-3P 288626-82-4P 288626-83-5P 288626-84-6P 288626-85-7P 288626-86-8P 288626-87-9P 288626-88-0P**

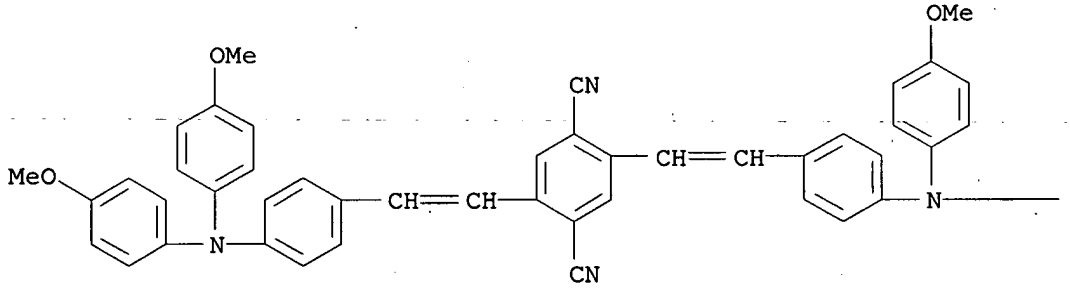
**288626-89-1P**
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(manuf. of bis(aminostyryl)benzenes showing yellow to red **electroluminescence** for display device)

IT **288626-90-4 288626-91-5 288626-92-6 288626-93-7**
RL: TEM (Technical or engineered material use); USES (Uses)
(manuf. of bis(aminostyryl)benzenes showing yellow to red **electroluminescence** for display device)

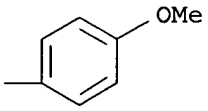
IT **251101-60-7P 251349-04-9P 253868-17-6P 253868-91-6P 288626-78-8P 288626-79-9P 288626-80-2P 288626-81-3P 288626-82-4P 288626-83-5P 288626-84-6P 288626-85-7P 288626-86-8P 288626-87-9P 288626-88-0P 288626-89-1P**
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(manuf. of bis(aminostyryl)benzenes showing yellow to red **electroluminescence** for display device)

RN 251101-60-7 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

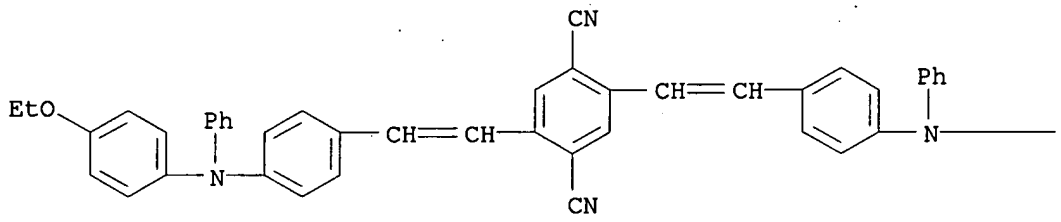



PAGE 1-B

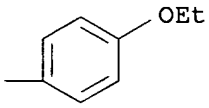



RN 251349-04-9 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-ethoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

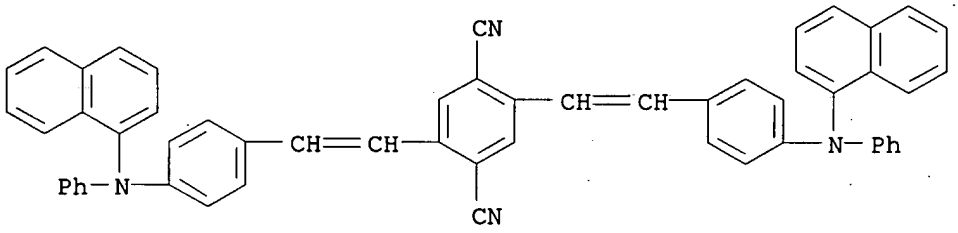
PAGE 1-A



PAGE 1-B

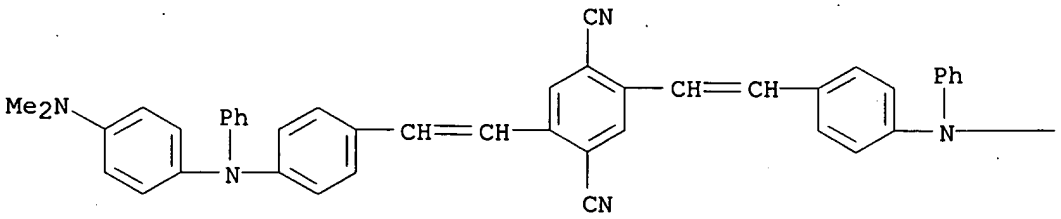


RN 253868-17-6 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



RN 253868-91-6 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(dimethylamino)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



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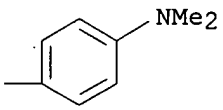
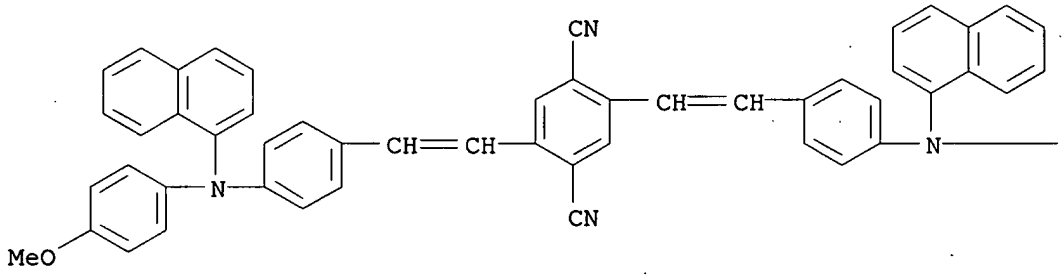



RN 288626-78-8 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)-1-naphthalenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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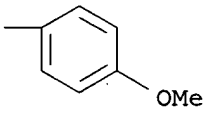
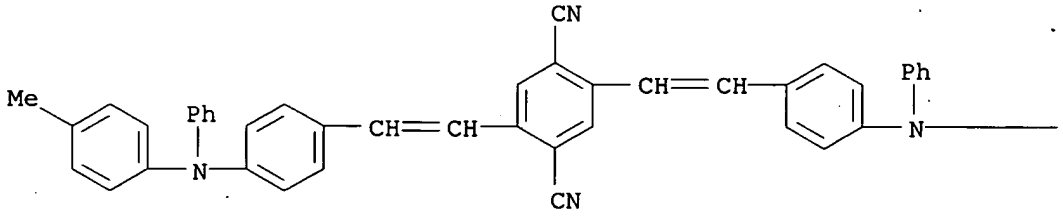
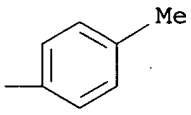



RN 288626-79-9 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

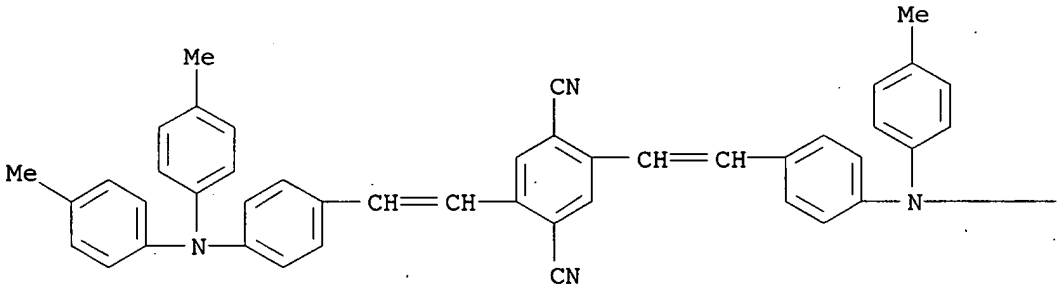


PAGE 1-B

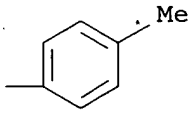



RN 288626-80-2 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis(4-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

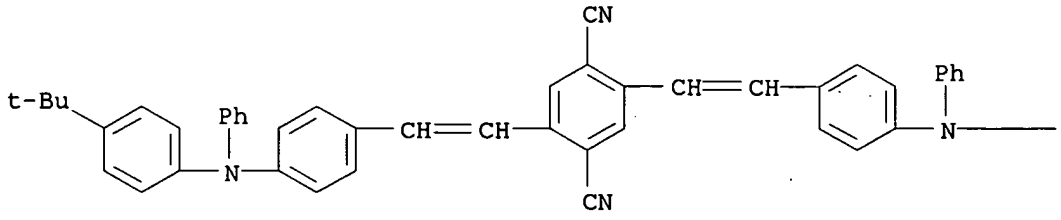



PAGE 1-B

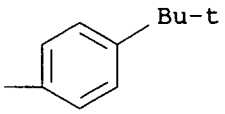



RN 288626-81-3 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(1,1-dimethylethyl)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

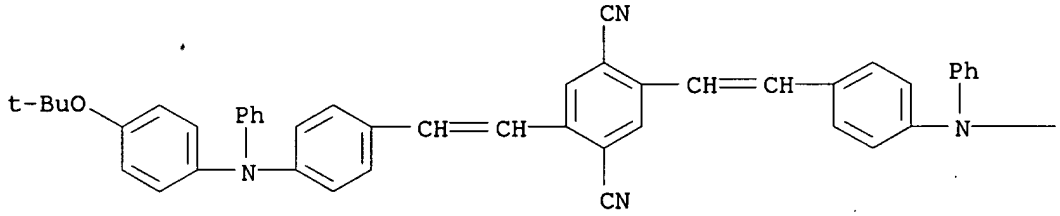


PAGE 1-B




RN 288626-82-4 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(1,1-dimethylethoxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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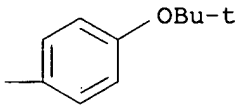
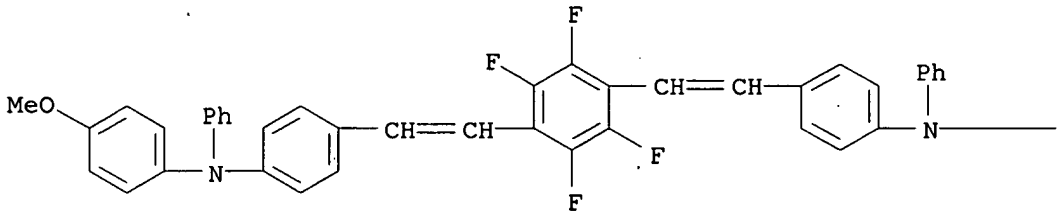



RN 288626-83-5 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N-(4-methoxyphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A



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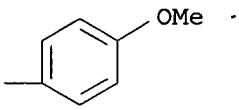
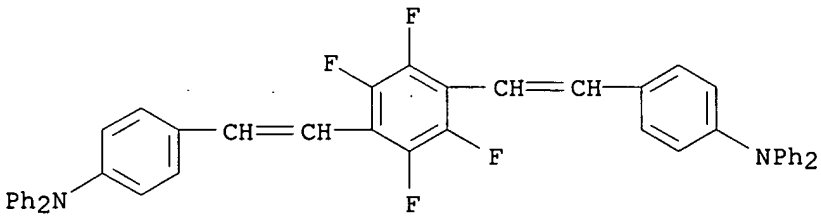
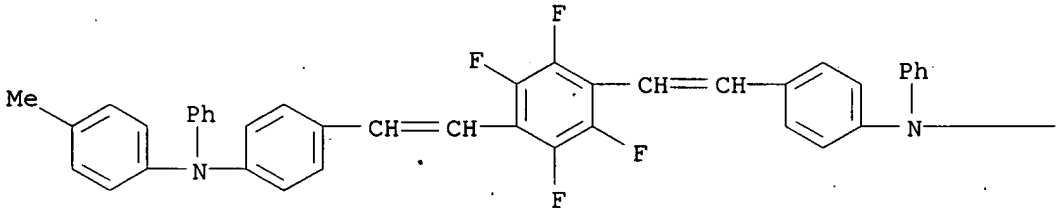



RN 288626-84-6 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-diphenyl- (9CI) (CA INDEX NAME)




RN 288626-85-7 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N-(4-methylphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

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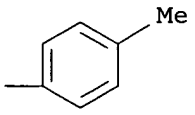
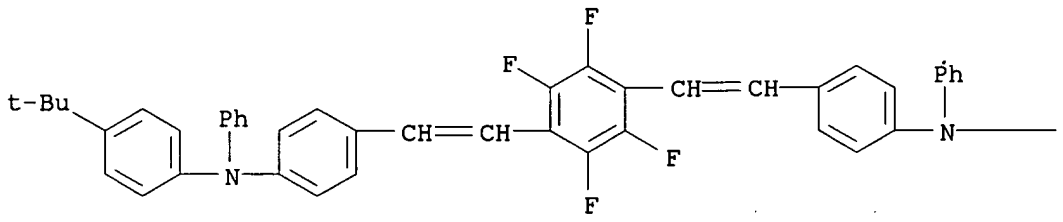
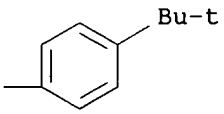



RN 288626-86-8 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N-[4-(1,1-dimethylethyl)phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

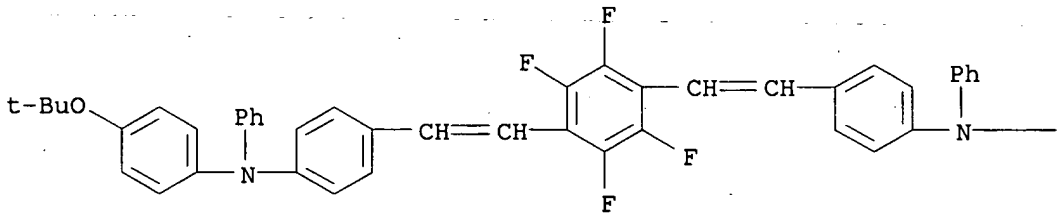


PAGE 1-B

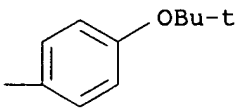


RN 288626-87-9 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N-[4-(1,1-dimethylethoxy)phenyl]-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

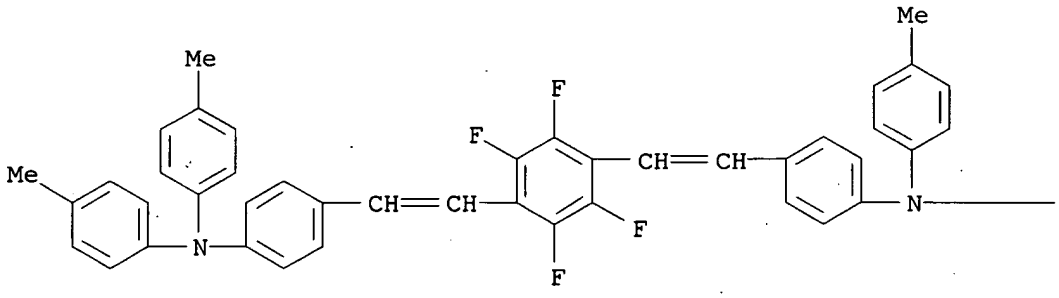


PAGE 1-B



RN 288626-88-0 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-bis(4-methylphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A

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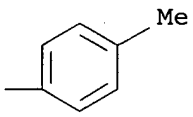
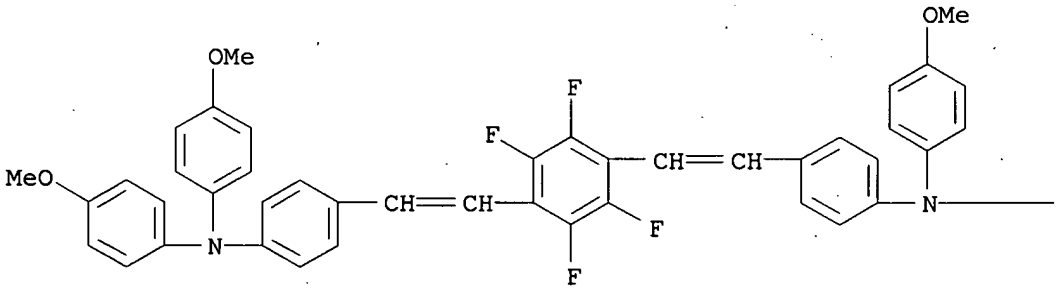
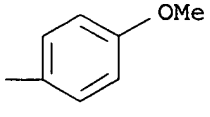



RN 288626-89-1 HCAPLUS
CN Benzenamine, 4,4'-[(2,3,5,6-tetrafluoro-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A




PAGE 1-B

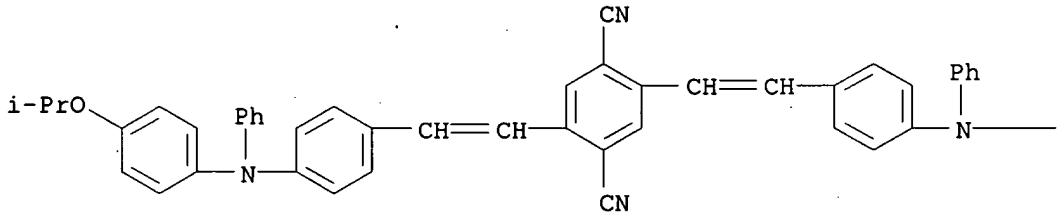



IT **288626-90-4 288626-91-5 288626-92-6**
**288626-93-7**

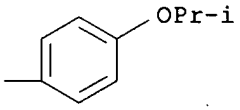
RL: TEM (Technical or engineered material use); USES (Uses)
(manuf. of bis(aminostyryl)benzenes showing yellow to red **electroluminescence** for display device)

RN 288626-90-4 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(1-methylethoxy)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

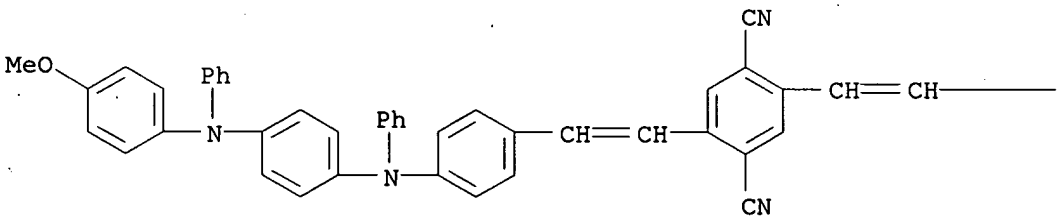



PAGE 1-B

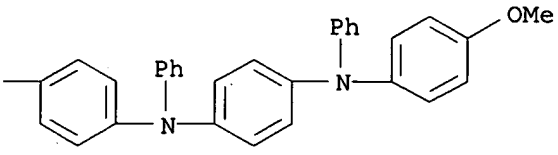



RN 288626-91-5 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-[(4-methoxyphenyl)phenylamino]phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



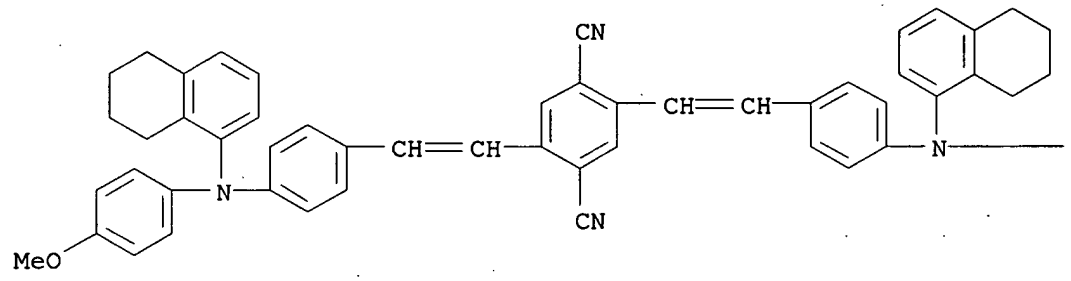

PAGE 1-B



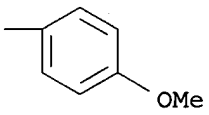

RN 288626-92-6 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)(5,6,7,8-

tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

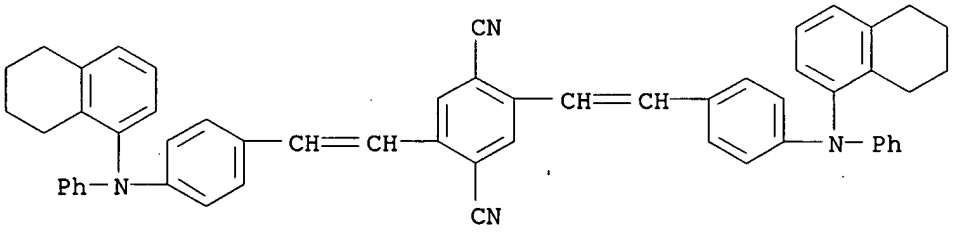
PAGE 1-A




PAGE 1-B




RN 288626-93-7 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[phenyl(5,6,7,8-tetrahydro-1-naphthalenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)




L22 ANSWER 17 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:205900 HCAPLUS
DN 132:243753
TI Organic **electroluminescent** device
IN Ishibashi, Tadashi; Ichimura, Mari; Tamura, Shinichiro
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)

FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2000091074 | A2 | 20000331 | JP 1998-258459 | 19980911 |
| PRAI JP 1998-258459 | | 19980911 | | |

OS MARPAT 132:243753

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB An org. **electroluminescent** device comprises a distyryl **electroluminescent** material represented by I or II [R1-4 = aryl group represented by III [ at least one of R13-17 is alkoxy, alkyl, amino, and alkylamino groups]; at least one of R5-12 is cyano, nitro, and halogen groups; at least one of R18-25 is cyano, nitro, and halogen groups].

ST org **electroluminescent** device distyryl compd

IT **Electroluminescent** devices
(org. **electroluminescent** device)

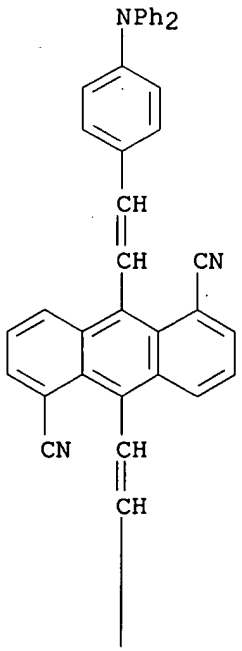
IT **261632-47-7 261632-49-9**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** device)

IT **261632-47-7 261632-49-9**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** device)

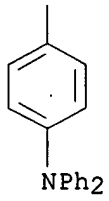
RN 261632-47-7 HCAPLUS

CN 1,5-Anthracenedicarbonitrile, 9,10-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

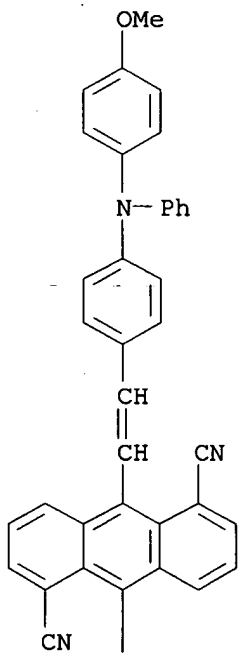


PAGE 2-A

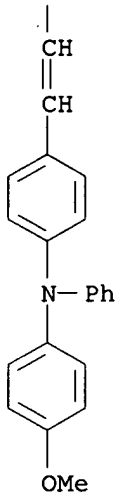



RN 261632-49-9 HCAPLUS
CN 1,5-Anthracenedicarbonitrile, 9,10-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 2-A




L22 ANSWER 18 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:205899 HCAPLUS
DN 132:243752
TI Organic **electroluminescent** device
IN Ishibashi, Tadashi; Ichimura, Mari; Tamura, Shinichiro
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| PI JP 2000091073 | A2 | 20000331 | JP 1998-258458 | 19980911 |
| PRAI JP 1998-258458 | | 19980911 | | |

OS MARPAT 132:243752
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

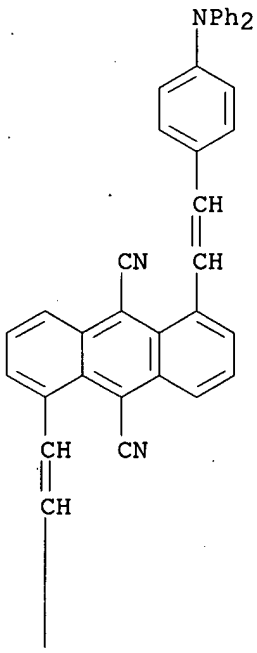
AB An org. **electroluminescent** device comprises a distyryl **electroluminescent** material represented by I or II [R1-4 = aryl group represented by III [ at least one of R13-17 is alkoxy, alkyl, amino, and alkylamino groups]; at least one of R5-12 is cyano, nitro, and halogen groups; at least one of R18-25 is cyano, nitro, and halogen groups].
ST org **electroluminescent** device distyryl compd
IT **Electroluminescent** devices
(org. **electroluminescent** device)
IT **261632-87-5 261632-88-6**

RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** device)

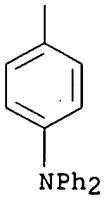
IT **261632-87-5 261632-88-6**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** device)

RN 261632-87-5 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 1,5-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

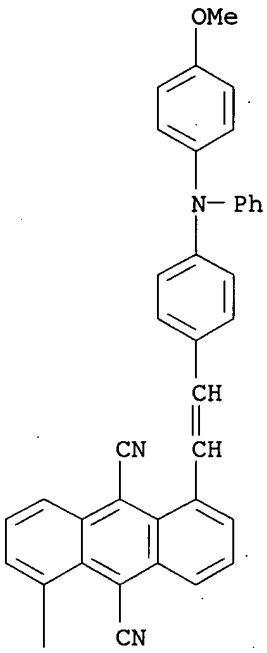



PAGE 2-A

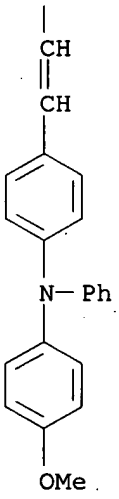



RN 261632-88-6 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 1,5-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A




PAGE 2-A



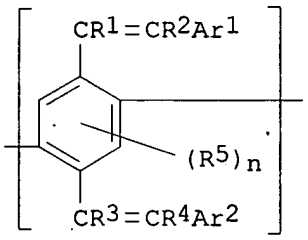

L22 ANSWER 19 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:43387 HCAPLUS
DN 132:100536
TI Compound involving styryl-type repeating unit, manufacture of the compound, and blue light-emitting **electroluminescent** device using the polymer
IN Igarashi, Tatsuya

KATHLEEN FULLER EIC 1700/PARKER LAW 308-4290

PA Fuji Photo Film Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C08G061-10
ICS C08G061-02; C09K011-06; H05B033-14
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 35, 38
FAN.CNT 1

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|
| JP 2000017057 | A2 | 20000118 | JP 1999-118266 | 19990426 |
| US 6210817 | B1 | 20010403 | US 1999-301120 | 19990428 |

PRAI JP 1998-120842 A 19980430
GI




I

AB The compd., preferably polymer, involves .gtoreq.2 repeating unit I [R1-R4 = H, substituent; R5 = substituent; n = 0-2; Ar1, Ar2 = (hetero)aryl]. The **electroluminescent** device has laminated org. substance layer contg. the compd. The compd. is prepd. by generating CC bond by using a Pd catalyst, e.g., reaction of a dibromide and a boric acid deriv. in the presence of Pd-C.

ST styryl compd polymer org **electroluminescent** device; boric acid deriv dibromide reaction; palladium catalyst dibromide borate reaction

IT **Electroluminescent** devices
Polymerization catalysts
(prepn. of styryl polymer by using palladium catalyst for blue light-emitting **electroluminescent** device)

IT 7440-05-3, Palladium, uses
RL: CAT (Catalyst use); USES (Uses)
(polymn. catalysts; prepn. of styryl polymer by using palladium catalyst for blue light-emitting **electroluminescent** device)

IT 254755-22-1P 254755-23-2P **254755-25-4P** 254755-26-5P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(prepn. of styryl polymer by using palladium catalyst for blue light-emitting **electroluminescent** device)

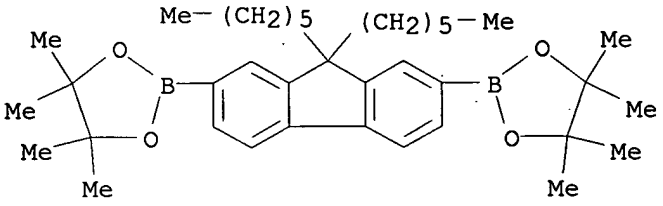
IT **254755-25-4P**
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(prepn. of styryl polymer by using palladium catalyst for blue light-emitting **electroluminescent** device)

RN 254755-25-4 HCAPLUS
CN Benzenamine, 4,4'-[(2,5-dibromo-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-

diphenyl-, polymer with 2,2'-(9,9-dihexyl-9H-fluorene-2,7-diyl)bis[4,4,5,5-tetramethyl-1,3,2-dioxaborolane] (9CI) (CA INDEX NAME)

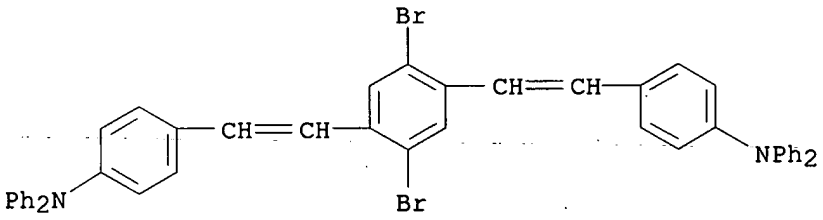
CM 1

CRN 254755-24-3
CMF C37 H56 B2 O4




CM 2

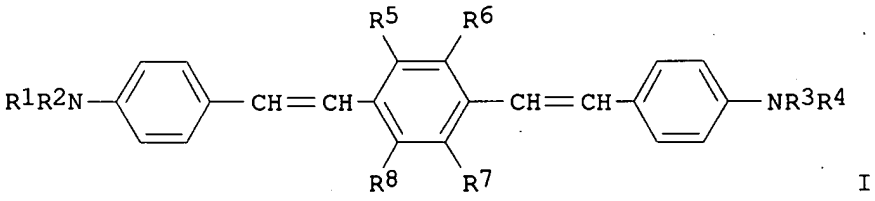
CRN 214626-73-0
CMF C46 H34 Br2 N2




L22 ANSWER 20 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:34393 HCAPLUS
DN 132:85754
TI Organic **electroluminescent** component
IN Ishibashi, Yoshi; Ichimura, Mari; Tamura, Shinichiro
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2000012225 | A2 | 20000114 | JP 1998-180580 | 19980626 |
| | US 6228514 | B1 | 20010508 | US 1999-339369 | 19990624 |
| | TW 469291 | B | 20011221 | TW 1999-88110778 | 19990625 |
| | KR 2000006490 | A | 20000125 | KR 1999-24404 | 19990626 |
| PRAI | JP 1998-180580 | A | 19980626 | | |

OS MARPAT 132:85754
GI



I

AB The invention refers to an org. **electroluminescent** device, suitable for use in flat panel displays such as computer monitors and TV screens, which contains the di-styryl compd. I [R1-4 = Ph, where at least one is substituted with at least one (un)satd. alkoxyl, or alkyl; and R5-8 = H, cyano, nitro or halo], as an **electroluminescent** material for red **luminescence**.

ST org **electroluminescent** device red **luminescence**

IT **Electroluminescent** devices
Optical imaging devices
(org. **electroluminescent** component)

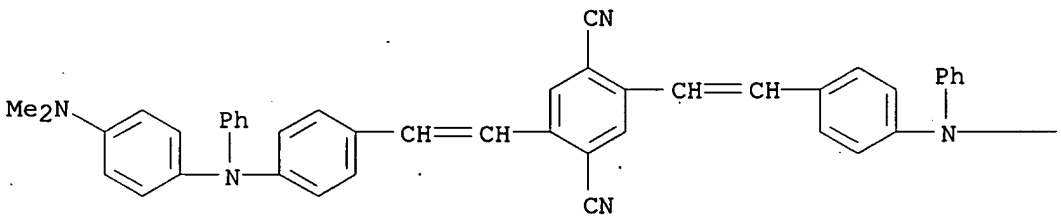
IT 90-30-2, .alpha.-Naphthylphenylamine 2085-33-8, Tris(8-hydroxyquinolinate) aluminum 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 50926-11-9, ITO 65181-78-4, TPD **253868-91-6**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** component)

IT **253868-91-6**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** component)

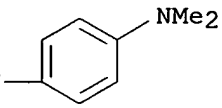
RN 253868-91-6 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-(dimethylamino)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



L22 ANSWER 21 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:32675 HCAPLUS
DN 132:85740
TI Organic **electroluminescent** component
IN Ishibashi, Yoshi; Ichimura, Mari; Tamura, Shinichiro
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2000012227 | A2 | 20000114 | JP 1998-180582 | 19980626 |
| | US 6242116 | B1 | 20010605 | US 1999-339368 | 19990624 |
| | CN 1241893 | A | 20000119 | CN 1999-111215 | 19990625 |
| PRAI | JP 1998-180582 | A | 19980626 | | |

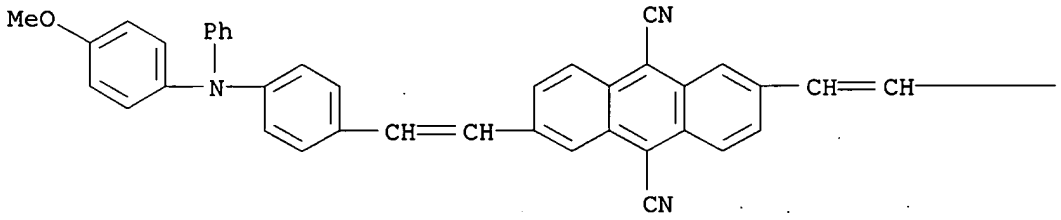
OS MARPAT 132:85740
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

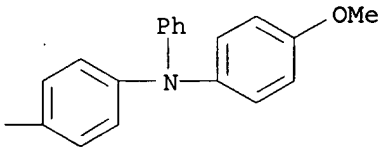
AB The invention refers to an org. **electroluminescent** device, suitable for use in flat panel displays such as computer monitors and TV screens, which contains the di-styryl compd. I [R1-4 = unidentical Ph substituted with at least one (un)satd. alkoxyl, or alkyl; and R5-12 contain at least one cyano, nitro or halo], and/or II [R18-25 contain at least one cyano, nitro, or halo] as an **electroluminescent** material for red **luminescence**.

ST org **electroluminescent** device red **luminescence**
IT **Electroluminescent** devices
Optical imaging devices
(org. **electroluminescent** component)
IT 90-30-2, .alpha.-Naphthylphenylamine 2085-33-8, Tris(8-hydroxyquinolinate) aluminum 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 50926-11-9, ITO 65181-78-4, TPD **253868-96-1** **253869-00-0**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** component)
IT **253868-96-1** **253869-00-0**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** component)
RN 253868-96-1 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

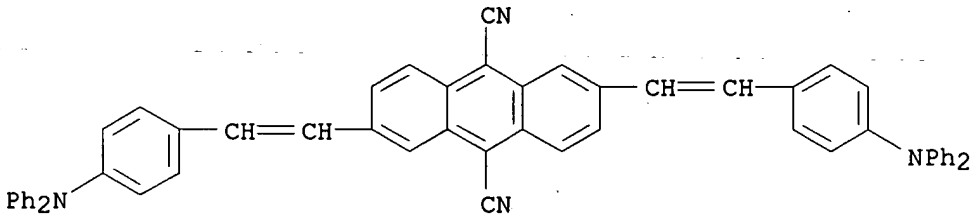
PAGE 1-A



PAGE 1-B



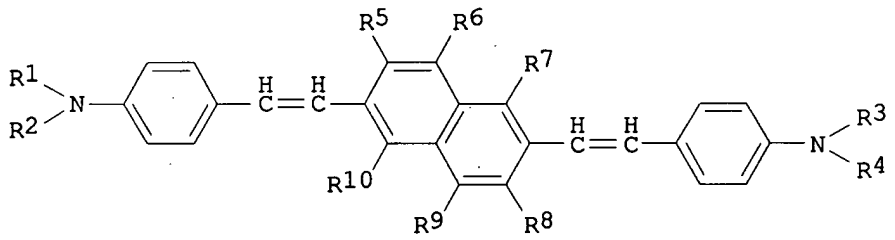
RN 253869-00-0 HCAPLUS
CN 9,10-Anthracenedicarbonitrile, 2,6-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)



L22 ANSWER 22 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:32673 HCAPLUS
DN 132:85739
TI Organic **electroluminescent** component
IN Ishibashi, Yoshi; Ichimura, Mari; Tamura, Shinichiro
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 2000012226 | A2 | 20000114 | JP 1998-180581 | 19980626 |
| | US 6265088 | B1 | 20010724 | US 1999-339536 | 19990624 |

EP 967834 A2 19991229 EP 1999-112272 19990625
EP 967834 A3 20000112
EP 967834 B1 20030326
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO
CN 1241892 A 20000119 CN 1999-110984 19990625
PRAI JP 1998-180581 A 19980626
OS MARPAT 132:85739
GI



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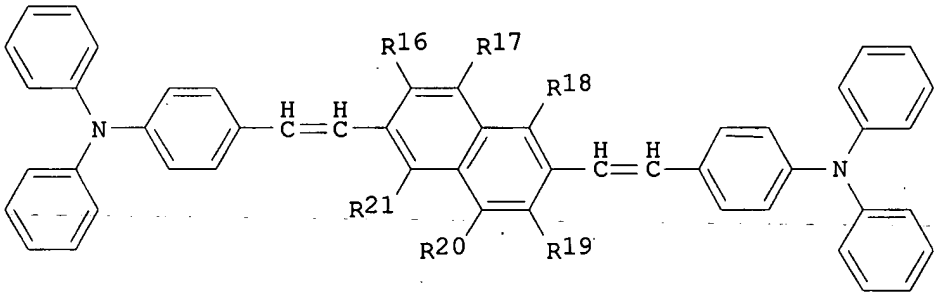


II

AB The invention refers to an org. **electroluminescent** device, suitable for use in flat panel displays such as computer monitors and TV screens, which contains the di-styryl compd. I [R1-4 = (un)substituted Ph with and at least one (un)satd. alkoxyl, or alkyl; and R5-10 = H, cyano, nitro or halo], and/or II [R16-21 = H, cyano, nitro, halo] as an **electroluminescent** material for red **luminescence**.

ST org **electroluminescent** device red **luminescence**

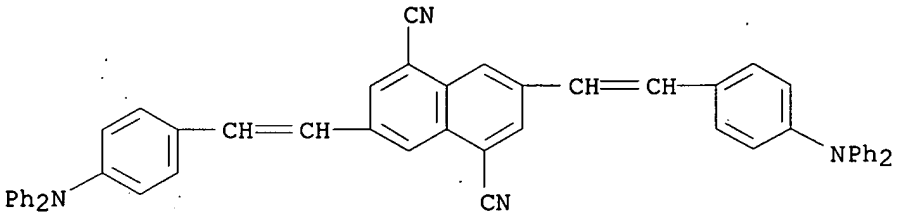
IT **Electroluminescent** devices
Optical imaging devices
(org. **electroluminescent** component)

IT 90-30-2, .alpha.-Naphthylphenylamine 2085-33-8, Tris(8-hydroxyquinolinate) aluminum 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 50926-11-9, ITO 65181-78-4, TPD **253868-44-9** **253868-45-0**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** component)

IT **253868-44-9** **253868-45-0**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** component)

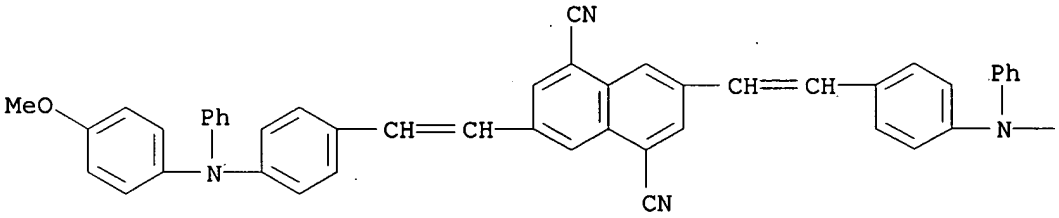
RN 253868-44-9 HCAPLUS

CN 1,5-Naphthalenedicarbonitrile, 3,7-bis[2-[4-(diphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

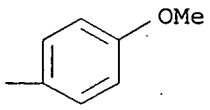



RN 253868-45-0 HCAPLUS
CN 1,5-Naphthalenedicarbonitrile, 3,7-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



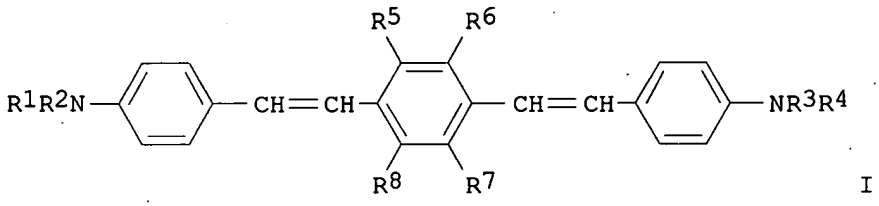

PAGE 1-B




L22 ANSWER 23 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 2000:32671 HCAPLUS
DN 132:85738
TI Organic **electroluminescent** component
IN Ishibashi, Yoshi; Ichimura, Mari; Tamura, Shinichiro
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 1

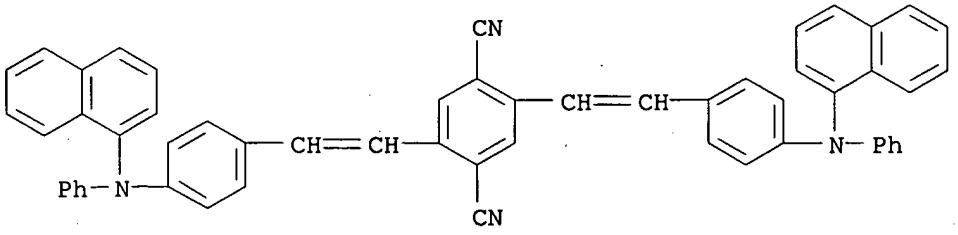
| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|

PI JP 2000012224 A2 20000114 JP 1998-180579 19980626
PRAI JP 1998-180579 19980626
OS MARPAT 132:85738
GI



I

AB The invention refers to an org. **electroluminescent** device, suitable for use in flat panel displays such as computer monitors TV screens, which contains the di-styryl compd. I [R1,4 = (un)substituted Ph with at least one (un)satd. alkoxyl, or alkyl; R2,3 = (un)substituted naphthalene with at least one (un)satd. alkoxyl, or alkyl; and R5-8 contain at least one cyano, nitro or halo], as an **electroluminescent** material for yellow **luminescence**.
ST org **electroluminescent** device yellow **luminescence**
IT Optical imaging devices
(org. **electroluminescent** component)
IT **Electroluminescent** devices
(org.; org. **electroluminescent** component)
IT 90-30-2, .alpha.-Naphthylphenylamine 2085-33-8, Tris(8-hydroxyquinolinate) aluminum 7439-95-4, Magnesium, uses 7440-22-4, Silver, uses 50926-11-9, ITO 65181-78-4, TPD **253868-17-6**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** component)
IT **253868-17-6**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** component)
RN 253868-17-6 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-(1-naphthalenylphenylamino)phenyl]ethenyl]- (9CI) (CA INDEX NAME)

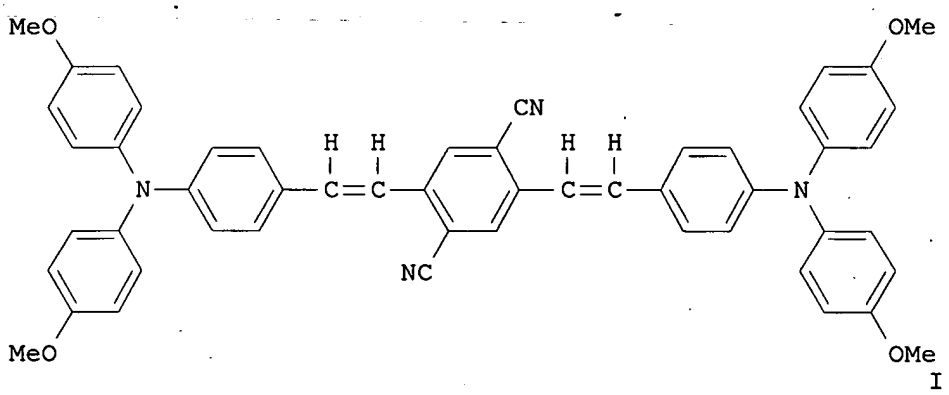


L22 ANSWER 24 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:756253. HCAPLUS
DN 132:16983
TI Organic **electroluminescent** device stably emitting high luminance red light
IN Ishibashi, Yoshi; Ichimura, Mari; Tamura, Shinichiro

PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 11329731 | A2 | 19991130 | JP 1998-134136 | 19980518 |
| | EP 960927 | A2 | 19991201 | EP 1999-109697 | 19990517 |
| | EP 960927 | A3 | 20000322 | | |
| | R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO | | | | |
| | US 6312838 | B1 | 20011106 | US 1999-312772 | 19990517 |
| | CN 1238656 | A | 19991215 | CN 1999-109472 | 19990518 |
| | US 2001055698 | A1 | 20011227 | US 2001-886858 | 20010621 |
| | US 2002009614 | A1 | 20020124 | US 2001-925243 | 20010808 |
| PRAI | JP 1998-134136 | A | 19980518 | | |
| | US 1999-312772 | A1 | 19990517 | | |

OS MARPAT 132:16983
GI




I

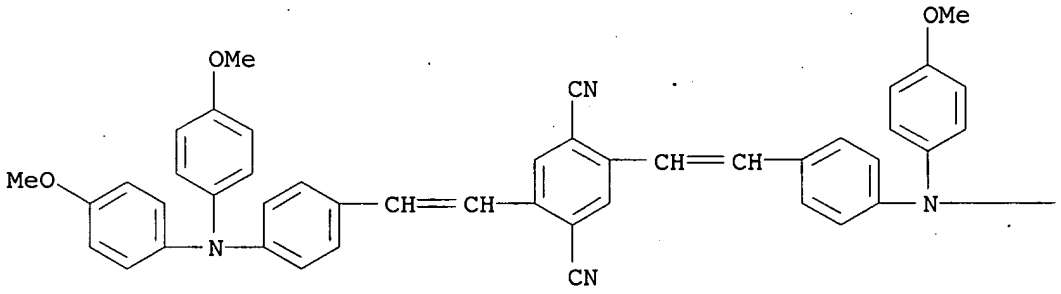
AB The org. **EL** device comprises a distyryl compd. I [R1-4 = aryl (X); R9-13 = (un)satd. alkoxy or alkyl; .gtoreq.1 group of R5-8 = cyano, nitro, or halo] as a light-emitting material.
ST org **electroluminescent** device distyryl light emitter
IT **Electroluminescent** devices
(red light-mitting org. **electroluminescent** device contg. distyryl compd. as light-emitting compd.)
IT **251101-60-7 251101-63-0 251101-76-5 251101-77-6 251101-78-7 251101-79-8 251101-81-2**
RL: DEV (Device component use); USES (Uses)
(red light-mitting org. **electroluminescent** device contg.

distyryl compd. as light-emitting compd.)

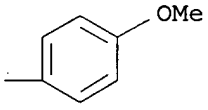
IT **251101-60-7 251101-63-0 251101-76-5 251101-77-6 251101-78-7 251101-79-8 251101-81-2**
RL: DEV (Device component use); USES (Uses)
(red light-mitting org. **electroluminescent** device contg. distyryl compd. as light-emitting compd.)

RN 251101-60-7 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

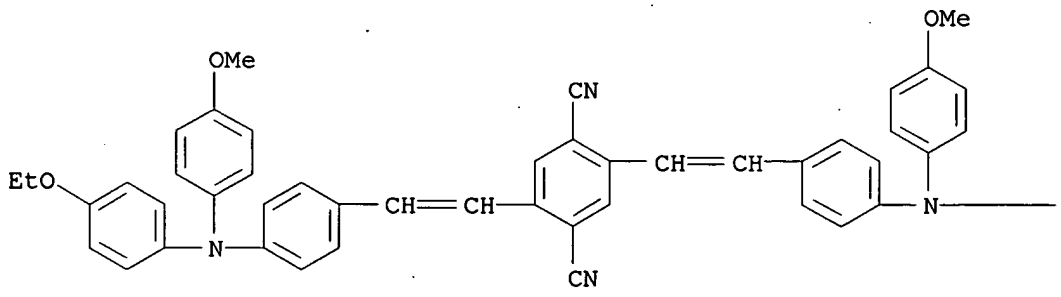



PAGE 1-B

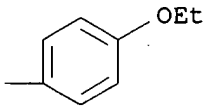



RN 251101-63-0 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-ethoxyphenyl)(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

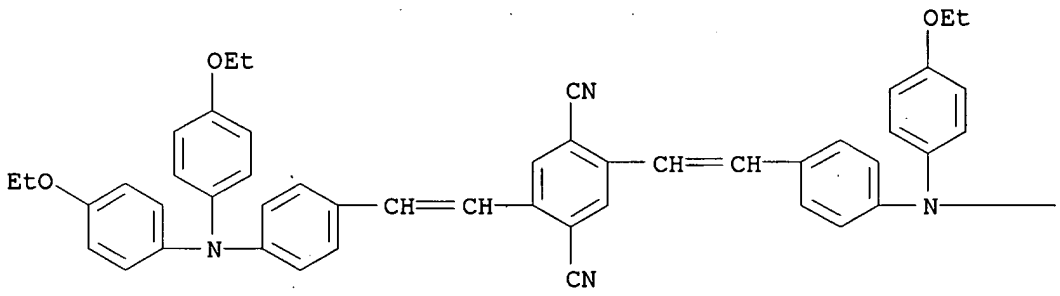


PAGE 1-B

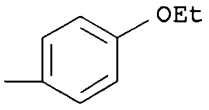



RN 251101-76-5 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis(4-ethoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

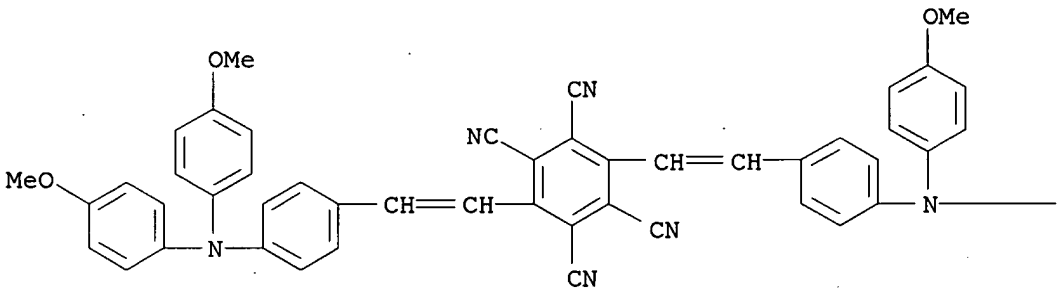



PAGE 1-B

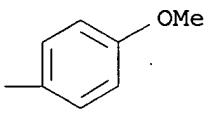



RN 251101-77-6 HCAPLUS
CN 1,2,4,5-Benzenetetracarbonitrile, 3,6-bis[2-[4-[bis(4-methoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

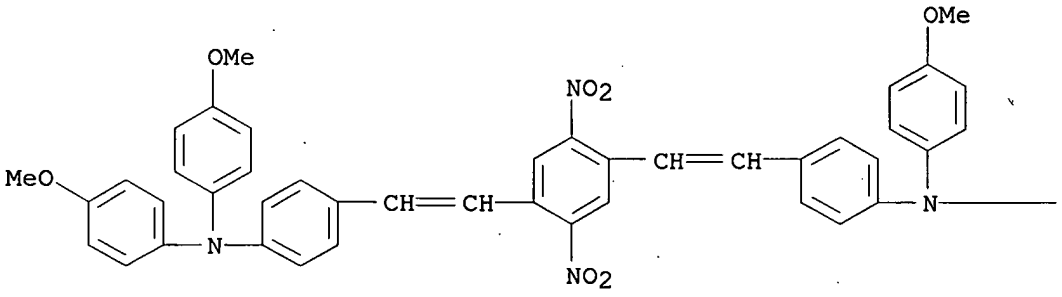



PAGE 1-B

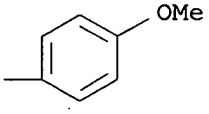



RN 251101-78-7 HCAPLUS
CN Benzenamine, 4,4'-[(2,5-dinitro-1,4-phenylene)di-2,1-ethenediyl]bis[N,N-bis(4-methoxyphenyl)- (9CI) (CA INDEX NAME)

PAGE 1-A



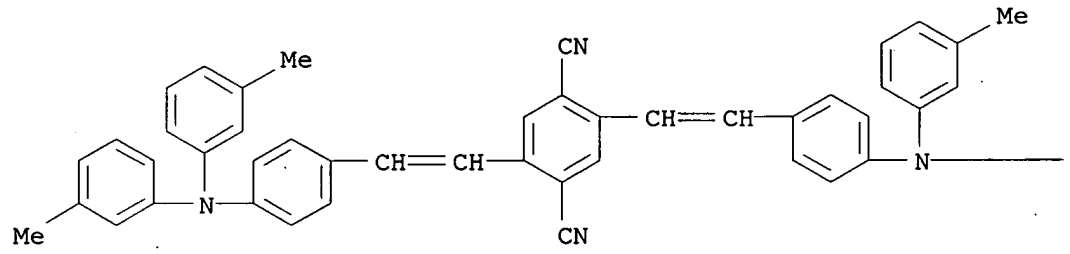

PAGE 1-B



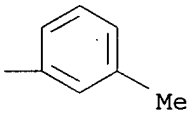

RN 251101-79-8 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis(3-methylphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A



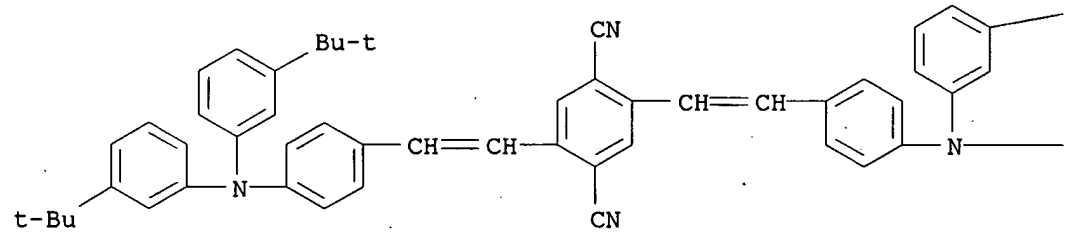

PAGE 1-B



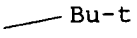

RN 251101-81-2 HCAPLUS

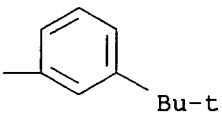
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[bis[3-(1,1-dimethylethyl)phenyl]amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A




PAGE 1-B

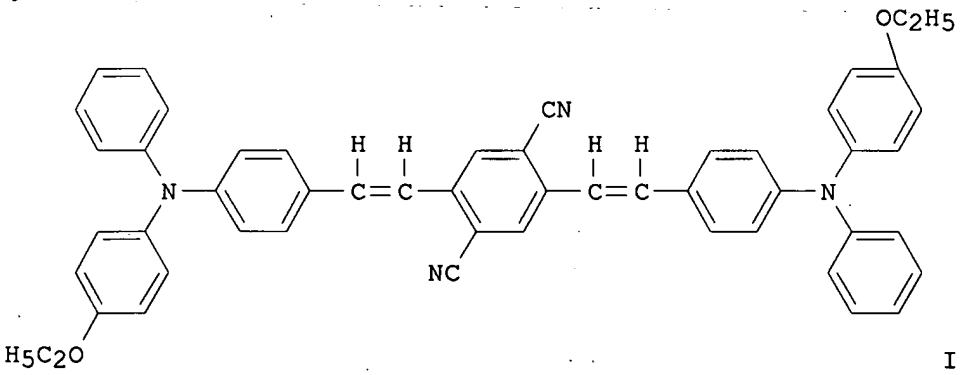


L22 ANSWER 25 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:756252 HCAPLUS
DN 132:16982
TI Organic **electroluminescent** device stably emitting high luminance red light
IN Ishibashi, Yoshi; Ichimura, Mari; Tamura, Shinichiro
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-14
ICS C09K011-06; H05B033-22
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 25
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 11329730 | A2 | 19991130 | JP 1998-134135 | 19980518 |
| | TW 423262 | B | 20010221 | TW 1999-88107633 | 19990511 |
| | US 2001033945 | A1 | 20011025 | US 1999-312764 | 19990517 |
| | US 6410167 | B2 | 20020625 | | |
| PRAI | JP 1998-134135 | A | 19980518 | | |

OS MARPAT 132:16982
GI




I

AB The org. **EL** device comprises a distyryl compd. I [R1, R4 = Ph; R2, R3 = aryl (X); .gtoreq.1 group of R9-13 = C.gtoreq.2 (un)satd. alkoxy or alkyl; .gtoreq.1 group of R5-8 = cyano, nitro, or halo] as a light-emitting material.

ST org **electroluminescent** device distyryl light emitter

IT **Electroluminescent** devices
(red light-mitting org. **electroluminescent** device contg. distyryl compd. as light-emitting compd.)

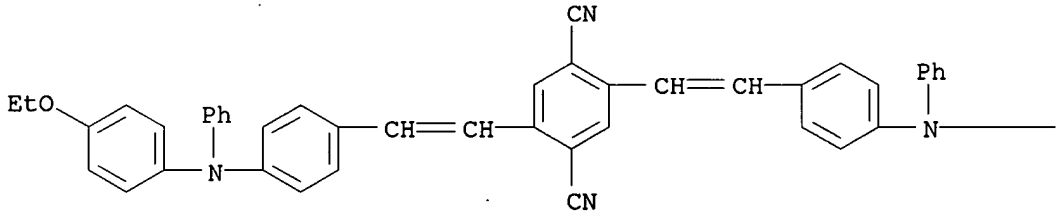
IT **251349-04-9 251349-05-0 251349-12-9**
**251349-13-0 251349-14-1 251349-15-2**
**251349-27-6**
RL: DEV (Device component use); USES (Uses)

(red light-mitting org. **electroluminescent** device contg. distyryl compd. as light-emitting compd.)

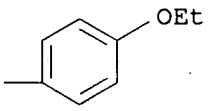
IT **251349-04-9 251349-05-0 251349-12-9 251349-13-0 251349-14-1 251349-15-2 251349-27-6**
RL: DEV (Device component use); USES (Uses)
(red light-mitting org. **electroluminescent** device contg. distyryl compd. as light-emitting compd.)

RN 251349-04-9 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-ethoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

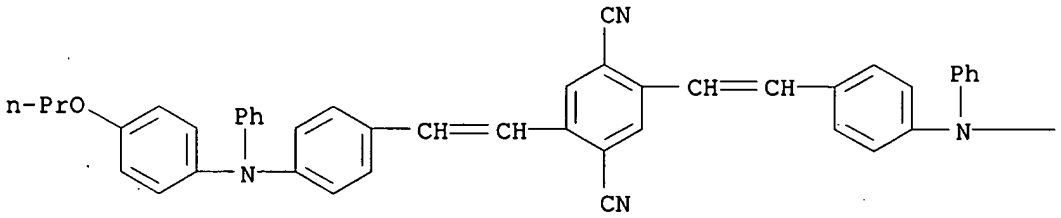



PAGE 1-B

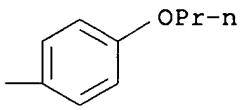



RN 251349-05-0 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[phenyl(4-propoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

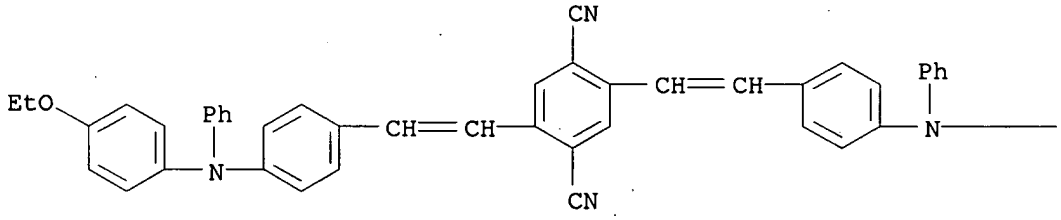


PAGE 1-B

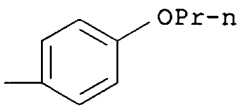



RN 251349-12-9 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2-[2-[4-[(4-ethoxyphenyl)phenylamino]phenyl]eth enyl]-5-[2-[4-[phenyl(4-propoxyphenyl)amino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

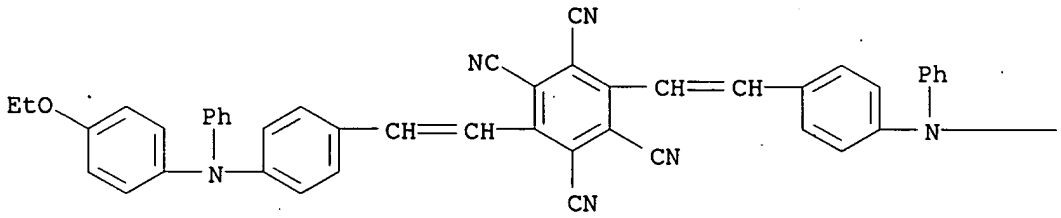



PAGE 1-B

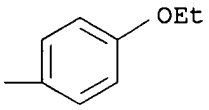



RN 251349-13-0 HCAPLUS
CN 1,2,4,5-Benzenetetracarbonitrile, 3,6-bis[2-[4-[(4-ethoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

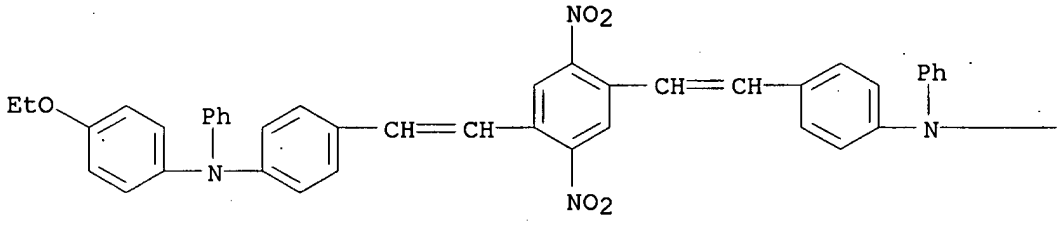


PAGE 1-B

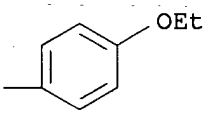



RN 251349-14-1 HCAPLUS
CN Benzenamine, 4,4'-[(2,5-dinitro-1,4-phenylene)di-2,1-ethenediyl]bis[N-(4-ethoxyphenyl)-N-phenyl- (9CI) (CA INDEX NAME)

PAGE 1-A

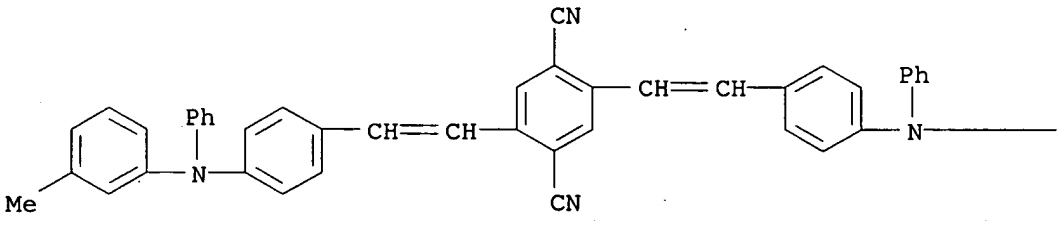



PAGE 1-B

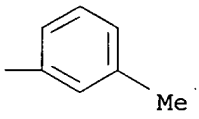



RN 251349-15-2 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(3-methylphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

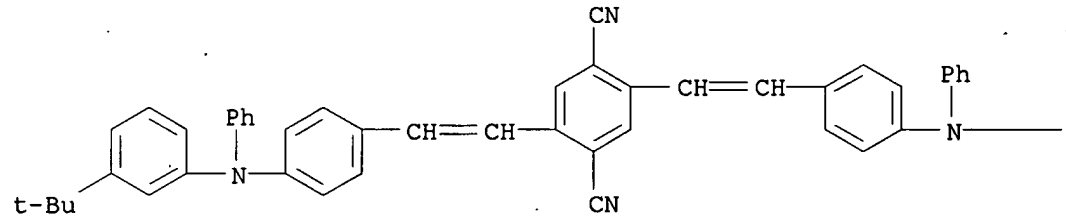


PAGE 1-B

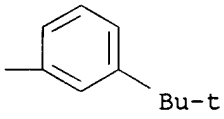



RN 251349-27-6 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[3-(1,1-dimethylethyl)phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A




PAGE 1-B




L22 ANSWER 26 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:638515 HCAPLUS
DN 131:250223
TI Organic **electroluminescent** device and its production method
IN Tamura, Shinichiro; Ishibashi, Tadashi
PA Sony Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H05B033-10
ICS H05B033-14; H05B033-26
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 42, 74
FAN.CNT 1

| | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|---|---|---|---|---|---|
| PI | JP 11273859 | A2 | 19991008 | JP 1998-75348 | 19980324 |
| | EP 954205 | A2 | 19991103 | EP 1999-105697 | 19990319 |
| | EP 954205 | A3 | 20010704 | | |

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO

PRAI JP 1998-75348 A 19980324

AB The invention relates to an org. **electroluminescent** device, suited for use in making a flat panel display, wherein the **electroluminescent** layer is prepd. by employing printing or coating techniques, such as screen printing, spin coating etc., using the coating or printing materials contg. a low mol. wt. org. **electroluminescent** substance.

ST org **electroluminescent** device coating printing

IT Printing (impact)
(flexog.; org. **electroluminescent** device with **electroluminescent** layer formed by printing or coating techniques)

IT **Electroluminescent** devices
(org. **electroluminescent** device with **electroluminescent** layer formed by printing or coating techniques)

IT Coating process
(spin; org. **electroluminescent** device with **electroluminescent** layer formed by printing or coating techniques)

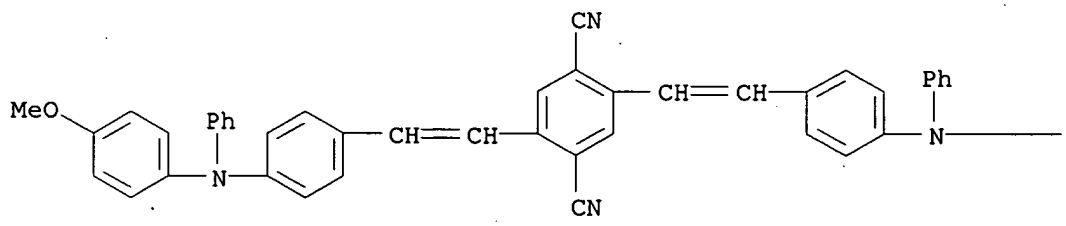
IT 2085-33-8, Al 8q 123847-85-8 124729-98-2 142289-08-5 **232948-26-4**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** device with **electroluminescent** layer formed by printing or coating techniques)

IT **232948-26-4**
RL: DEV (Device component use); USES (Uses)
(org. **electroluminescent** device with **electroluminescent** layer formed by printing or coating techniques)

RN 232948-26-4 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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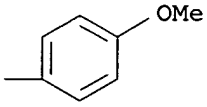

L22 ANSWER 27 OF 27 HCAPLUS COPYRIGHT 2003 ACS
AN 1999:379147 HCAPLUS
DN 131:122474
TI Synthesis of organic **EL** materials with cyano group and evaluation of emission characteristics in organic **EL** devices
AU Kim, Dong Uk
CS Dep. Science Education, Taegu National Univ. Education, Taegu, 705-715, S. Korea
SO Journal of the Korean Chemical Society (1999), 43(3), 315-320
CODEN: JKCSEZ; ISSN: 1017-2548
PB Korean Chemical Society
DT Journal
LA Korean
CC 73-5 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 22, 35, 76
AB Novel **electroluminescent** materials were designed and synthesized. Polymers, PU-BCN, and low molar mass material with the same chromophores, D-BCN, were synthesized. A mol. structure of new chromophore material has bisstyrylbenzene deriv. with cyano groups for electron injection and transport and with phenylamine groups for hole injection and transport. Three devices were used: a device with PU-BCN and D-BCN as an emission layer which is a single-layer device (SL), a device with indium-tin oxide(ITO)/emission layer/MgAg as a DL-E device and a device with ITO/triphenylamine deriv./emission layer/MgAg as a DL-H device. The two emission materials, PU-BCN and D-BCN with the same emission-chromophore were evaluated in high c.d. **EL** emission max. peaks of two material were detected at about 640 nm wavelength of red emission region.
ST **electroluminescence** org PU BCN chromophore
IT **Luminescence**
(of BCN-deriv. **electroluminescent** materials in relation to c.d.)
IT **Electroluminescent** devices
(org.; synthesis and evaluation of emission characteristics of)
IT Polyurethanes, reactions
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of org. **electroluminescent** materials contg.)
IT **232948-25-3P 232948-26-4P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(org. **electroluminescent** materials; synthesis of)
IT 68-12-2, reactions 101-68-8 2009-83-8, 6-Chlorohexan-1-ol 4316-51-2 25069-86-7, Phenol, p-(diphenylamino)- 232948-23-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(synthesis of org. **electroluminescent** materials using)
IT 87755-82-6P 168124-23-0P 232948-22-0P **232948-24-2P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of org. **electroluminescent** materials using)
IT **232948-25-3P 232948-26-4P**
RL: PEP (Physical, engineering or chemical process); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(org. **electroluminescent** materials; synthesis of)
RN 232948-25-3 HCAPLUS

CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-[(6-hydroxyhexyl)oxy]phenyl]phenylamino]phenyl]ethenyl]-, polymer with 1,1'-methylenebis[4-isocyanatobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 232948-24-2
CMF C60 H58 N4 O4

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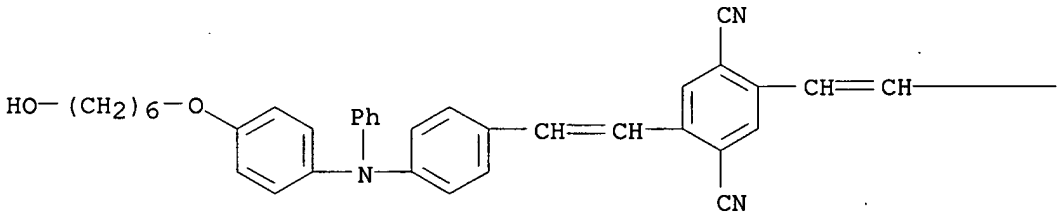


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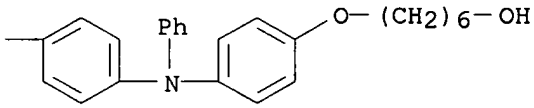
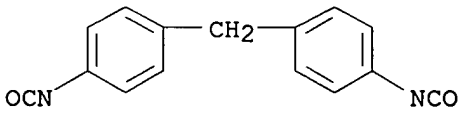


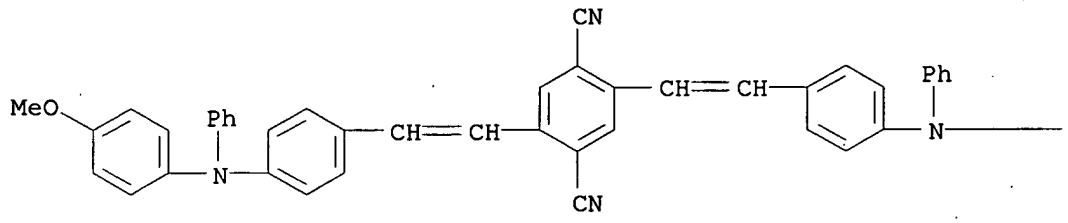

CM 2

CRN 101-68-8
CMF C15 H10 N2 O2




RN 232948-26-4 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[(4-methoxyphenyl)phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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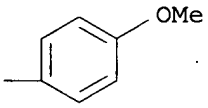
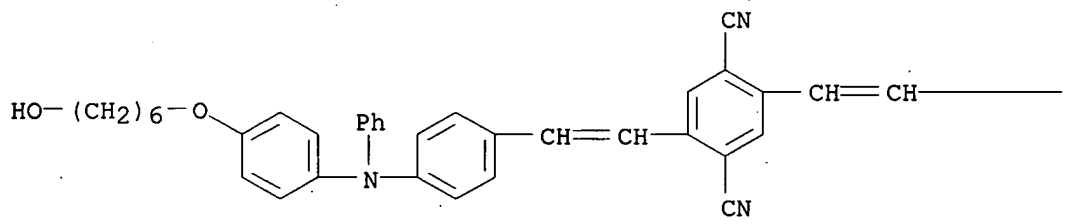



IT **232948-24-2P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of org. **electroluminescent** materials using)
RN 232948-24-2 HCAPLUS
CN 1,4-Benzenedicarbonitrile, 2,5-bis[2-[4-[[4-[(6-hydroxyhexyl)oxy]phenyl]phenylamino]phenyl]ethenyl]- (9CI) (CA INDEX NAME)

PAGE 1-A

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